THE EFFECTS OF PERSONAL INVOLVEMENT ON DISSONANCE AND INCENTIVE THEORIES OF ATTITUDE CHANGE

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by

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ABSTRACT

This study examined Frey and Irle's (1972) hypotheses concerning attitude change in the light of an additional variable, specifically level of personal involvement.

Frey and Irle (1972) hypothesized that under Choice/Public conditions, a Dissonance effect will occur and under No choice/Anonymous conditions an Incentive effect will occur. The current study had two hypotheses. One hypothesis was that the factor personal Involvement is as important as the three factors Frey and Irle considered. The second hypothesis was a reproduction of Frey and Irle's original ones. The first hypothesis was confirmed, the second rejected.

It is considered that Frey and Irle did not provide a satisfactory resolution to the Incentive-Dissonance debate, as consideration of only three variables was overly simplistic. Neither theory is very satisfactory, due to too much latitude in the operational definition of terms.

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DEDICATION

I dedicate this thesis to my Mother, Paula, in gratitude for her active Quaker ideals, her complete loyalty and her humanitarian concern for others.

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CHAPTER I

INTRODUCTION

In 1957, Leon Festinger introduced his Cognitive Dissonance version of Balance Theory (Festinger, 1957). Initially, Cognitive Dissonance theory received much attention from researchers in the field of social psychology. This fact was emphasized by one of the theory's main critics, namely Bem, who commented that it:

> "...has received more widespread attention from personality and social psychologists in the past 10 years than any other contemporary statement about human behaviour". (Bem, 1967, p. 183).

However, if this statement was true for the period 1957-1967, it must be noted that interest has considerably waned in the last decade.

Before undertaking discussion of Dissonance theory, mention should first be made of the research of Kelman (1953), who provided some basis for the later formulation of Festinger's theory. Kelman demonstrated that more attitude change occurred amongst seventh grade students who had been offered a comparatively low incentive to write an essay in favour of a less preferred comic book, than those who had been offered a comparatively higher incentive.

Although Kelman's results are supportive of what the Dissonance approach would have predicted,the study is open to criticism. Self-selection may have contaminated the results, because considerably fewer subjects in the low-incentive condition complied with the discrepant request,than was the case in the high-incentive condition. Yet this criticism does not alter the fact that the Kelman study was, in many respects, the fore-runner or pioneer of the theory that was later formulated by Festinger.

Dissonance theory rests on a number of assumptions. The central assumption is that man has an innate intolerance of inconsistency. If inconsistency does exist, man is motivated in the direction of trying to attain a balanced or consistent state. Using the terminology of the theory, if dissonance does exist, man is activated and directed to obtain consonance, and also to actively avoid situations and information that will maintain dissonance. Cohen, a stalwart of Dissonance theory, suggests that:

> "learning to tolerate dissonance is possible" (Cohen, 1962).

Altogether, too little evidence is forthcoming in support of the assumption.

Shaw and Skolnick (1973), proposed several of the questions in need of an answer. For example: How

centrally placed is consonance-seeking in an individual's repertoire? How does consonance-seeking rank in the general social consensus of what constitutes desirable behaviour? Shaw and Skolnick argued that such traditional and desirable behaviours as power, approval, achievement and the like, were more strongly preferred than motivation towards consistency (or consonance). Shaw and Skolnick also asked: How aware or otherwise, of his consistency is a person?

However, criticisms aside, Dissonance theory rests upon the assumption that man behaves in such a fashion that consistency is maximized and inconsistency is minimized, with regard to his interpersonal relations, cognitions, beliefs, feelings and actions.

Another assumption that is decidely questionable, is that an overt act is required for dissonance to occur. For example, a person feels conflict (not dissonance), when he tries to choose between two desirable makes of car, but dissonance (or psychological discomfort) only after he has overtly made his choice, and acted upon it. However, Arrowood and Ross (1966) demonstrated that subjects who expected to expend much effort preparing for a test that they may not be required to sit, showed higher subjective expectation that they would have to take the test. In other words they exhibited more change in attitude, as a consequence of dissonance,

and this occurred in the absence of any overt act. (They did not have to sit the test). This study was a successful partial replication of an earlier study by Yaryan and Festinger (1961).

Festinger's theory purports to describe the organization and dynamics of the cognitive system, which progressively develops as cognitive elements are gradually integrated. The cognitive elements embrace a broad semantic spectrum. Cognitive elements are defined by such things as, for example, bits of knowledge (it is snowing), opinion or belief concerning oneself, others or the environment generally.

Three types of relationships arise that bear on the dynamic interplay of new cognitive elements with established elements of the cognitive system. Firstly, a dissonant relationship, or psychological inconsistency is proposed as existing, whenever one cognitive element conflicts with another. In other words, employing Festinger's terminology, the relationship is deemed dissonant if:

> "the one element does not, or would not be expected to follow from the other". (Festinger, 1957, p. 15)

For a conscientious objector, discharging a rifle at enemy troops would constitute a cognitive element that is dissonant with his beliefs. Secondly, a consonant

relationship exists if one cognitive element can be expected to follow from the other. For a conscientious objector, refusing to train for warfare would be a cognitive element consonant with his beliefs. Thirdly, the relationship between two cognitive elements may be that of "irrelevancy"; Zimbardo et al (1965), demonstrated that subjects who ate fried grasshoppers (a dissonant element) for a negatively-evaluated experimenter, exhibited more attitude change (in favour of such food) than subjects who complied for a favourably-evaluated experimenter. Whether the experimenter was negative (unpleasant) or positive (pleasant) involved manipulation of an "irrelevant" element, in terms of Dissonance theory. Similarly, Aronson and Golden (1962) showed that the "irrelevant" cognitive element of race, influenced acceptance of a speech favouring arithmetic amongst sixth grade school children. It must be stressed that "irrelevancy" of a cognitive element has a special meaning related narrowly to Festinger's theory. It does not mean irrelevancy as is commonly used. Instead, "irrelevancy" in Festinger's terms means that such an element does not directly relate to the decision such as a consonant or dissonant element does.

Classes of Decision Making

Originally, Dissonance theory outlined two major classes of decision-making, that of Forced compliance,

which has received the most attention, and Free choice. The terms have a stricter meaning within the theory, than common usage of such words may suggest.

In Forced compliance situations, the subject is induced to engage in some behaviour that is discrepant with his actual attitude. The classic study involving Forced compliance was that of Festinger and Carlsmith (1959), which is worthy of some elaboration as many studies have evolved from it. In their experiment, sixty undergraduate subjects were randomly assigned to one of three experimental conditions, which respectively provided two levels of incentive ($1 or $20), and a control. The task required was identical for the subjects in both the $1 and the $20 conditions. Specifically, the subjects performed a tedious repetitive task, and were then paid either $1 or $20 to tell a waiting subject (actually a confederate), that the task was enjoyable. (Controls simply performed the repetitive task). The results showed that the subjects who were paid the lower incentive, evaluated the task as significantly more enjoyable than the subjects paid the higher incentive. Festinger and Carlsmith interpreted their results in the following manner. All subjects initially adhere to the cognition that the task is dull and boring. However, the experimental subjects have the additional cognition that they have told another "student" that the task is enjoyable. The subjects receiving the

lesser incentive experience more consequent dissonance, than the subjects receiving the greater incentive, which in itself provides justification for their actions. The students receiving the lower incentive, reduce dissonance by changing their view of the task, so that it is more in accordance with their verbal description of it as "enjoyable".

This study was not without criticism. As Carlsmith et al (1966) point out, some investigators claim that the $20 incentive, being inordinately large, would create guilt, suspicion, and the like. (Rosenberg (1965) propounded quite an elaborate alternative explanation along these lines). However, in order to counter such criticism, Brehm and Cohen (1962) partially replicated the Festinger and Carlsmith study using smaller incentives (50¢, $2, $5 or $10). Their obtained results were supportive of Festinger and Carlsmith's investigation, and consistent with Dissonance theory predictions.

In the Free choice class of decision-making, the subject is free to make a selection from a number of objects or alternative actions. The dependent variable is the subject's attitude rating of both the chosen and the rejected alternatives. Brehm and Cohen (1959) provided the very first Free choice experiment.

In their study, school children were asked to indicate on a scale their liking for each of 16 toys both before and after being permitted to choose one. Some subjects chose between qualitatively similar toys, while others chose between qualitatively dissimilar toys. Dissonance theory predicts that the magnitude of dissonance will be reflected in an increase in liking for the chosen alternative and a decrease in liking for the rejected alternative. The greatest evaluative change occurred in the subjects who chose between the dissimilar toys as Dissonance theory predicts.

Comparatively speaking, the Free-choice situation yields greater dissonance than that of Forced compliance. Furthermore, dissonance increases as choices become more equally attractive. The Forced compliance situation yields less dissonance, because there is greater initial justification. Dissonance theory holds that the greater the initial justification, the less the dissonance, and one may cite such experiments as Festinger and Carlsmith (1959) and Brehm and Cohen (1962) for support.

Although the original major classes of decision-making included either Forced compliance or Free choice situations, a third class has gradually evolved.

Exposure-to-information studies

There are two major approaches within this third major class. Firstly, there are studies in which subjects are involuntarily exposed to information that contradicts that which he already has. For example, Bramel (1962) led subjects to either a favourable or an unfavourable view of their own personality. Then he gave information implying that the subjects were experiencing homosexual arousal. The results showed that the higher the subjects self-esteem measure, the more arousal he attributed to (or projected upon) his partner, as a means of reducing dissonance.

The second paradigm includes studies which examine a subject's readiness to expose himself to information discrepant with his cognitions. However, the effects are often hard to replicate according to Bem (1967), who refers to studies such as that of Aronson and Carlsmith (1962). McGuire (1966) claims that the original findings may be artifactual.

Modes of Dissonance Reducation

Some brevity is required here, as most research on the modes is less "cut and dried" than that dealing with factors affecting magnitude of dissonance reduction (see page 14). Thus, to separate modes of dissonance reduction, from magnitude of dissonance, becomes a difficult task.

As is true of other aspects of Dissonance theory, the modes initially proposed by the pioneers have been added to, and a degree of sophistication of the organisation of this area has emerged, as the work of Kumpf and Götz-Marchand (1973) illustrates.

The modes of dissonance reduction fall concisely into two categories. As a consequence of dissonance, the person can either find means of avoiding a change of decision, attitudes or behaviour, or alternatively change his decision in accordance with the discrepant message. The writer will examine these categories under the respective headings of non-conformity and conformity.

a) Non-conformity

One means of achieving this is by adding consonant elements. To reduce post-decisional dissonance, the person thinks up supportive evidence to back up his choice or viewpoint. This changes the ratio of consonant to dissonant elements in a favourable direction.

The individual may increase the cognitive overlap between cognitive elements by searching for or misperceiving aspects of functional equivalence. Stated more simply, this means cognitively minimizing the differences (or increasing the similarity), between the chosen and the unchosen alternatives.

Discrediting the communicator or derogation of source is another mode of dissonance reduction not involving decisional change. McGinnies (1973), in a study involving Japanese university students, demonstrated the disparagement of the less credible of two communicators, when both presented attitudes extremely discrepant from those held by the students.

Selective attention or distortion of information are other modes of dissonance reduction. Berscheid and Walster (1969) found that when a subject mistreats someone else, he can deny responsibility for his action as a means of dissonance reduction. In addition, he could derogate the mistreated person, thus justifying his action as a means of dissonance reduction. Another possible mode was to minimize the person's suffering.

Kumpf and Götz-Marchand (1973) added a welcome degree of sophistication to the area, in their organisation of modes of dissonance reduction into Confrontation and Avoidance mechanisms.

These investigators invited engaged female students to take part in a phony "Marriage expectancy test", which was supposedly a predictor of marital harmony. After sitting this test, the subjects received fake results which differed negatively from their initial expectations of marital success.

The avoidance mechanisms, namely devaluation of the issues importance and also under-recall, showed a steep increase as expectation-result discrepancy increased. The confrontation mechanisms, including conformity with result and derogation of source, were less prominent and exhibited less increase as a function of discrepancy. The writer will return later to this study, as it relates to personality factors that determine the magnitude of dissonance. The Confrontation mechanism - conformity with result - correctly belongs to the second category of modes by which an individual will change his decision, or conform.

b) Conformity

If other means of dissonance reduction are either closed or exhausted, an individual will change his decision in line with the discrepant communication, or in other words he conforms. The person can experience opinion, attitude or evaluative change or he can exhibit behaviour change. The distinctions are admittedly arbitrary, and these different types of change are often intertwined. However, with that qualification, one can turn to the study of Bochner and Insko (1966) who addressed themselves to the issue of opinion change.

(i) Under conditions of high source credibility, the opinion change was greatest when opinion-communication discrepancy was maximized, which is consistent with Dissonance theory predictions. However, under conditions involving a less credible source, opinion change was related to discrepancy size by an inverted U-shaped function. This interesting effect has no simple explanation in Dissonance theory terms.

Evaluative change has been shown with regard to attraction to groups, preference for objects, valuation of activities, food preferences, sensory characteristics, subjective experiences, assessment of a case history, and liking for persons to mention a few examples (Brehm and Cohen 1962). Later in this account, Cohen's study involving liking for ones fiance will be examined; thus there is no point in elaborating at this stage.

(ii) With respect to behaviour change as a mode of dissonance reduction, Adams and Rosenbaum (1962) examined worker productivity. There were four conditions, including two specifically designed to arouse dissonance. In one condition, subjects were paid $3.50 an hour, but were led to believe that they were over-paid because they lacked the necessary

qualifications. In a second condition, the subjects were paid a piece rate of 30¢, and again led to believe that they were overpaid for the same reason. The non-dissonant conditions involved the same payment, but the subjects were led to believe that they were receiving a fair pay. In line with Dissonance theory predictions, the subjects in the two dissonant conditions yielded the highest productivity. This was their overt mode of reducing dissonance.

Magnitude of Dissonance

A number of factors affect the degree or magnitude of dissonance. Therefore, under what conditions, according to the research, is the arousal of dissonance greatest?

When a "voluntary commitment" is made, the greater the choice in the compliance, or otherwise, the greater the dissonance (Brehm and Cohen, 1962). Frey and Irle considered Choice to be a precondition for dissonance to even exist.

Also, the size of the discrepancy between the subject's view and the discrepant communication, can affect the magnitude of dissonance. However, another determinant of the magnitude of dissonance, namely effort, determines whether dissonance is increased or

decreased. The Effort hypothesis has been stated as follows:

> "Under greater, but not lesser degrees of perceived effort expended, increasing the discrepancy between a person's initial position and new information counter to that opinion gives rise to increased dissonance and consequent attitude change." (Cohen, in Brehm and Cohen, p. 388, 1962).

The converse is also true.

Himmelfarb and Arazi (1974), examined the effects of choice, source attractiveness and size of discrepancy with respect to an issue that the subjects were highly involved in. The obtained results were consistent with Dissonance theory predictions. When subjects chose to expose themselves to the discrepant message, that from an unattractive source produced the greatest opinion change. (The theory holds that a message from an unattractive source yields the most dissonance, and therefore attitude change, but this will be taken up at a later stage).

Himmelfarb and Arazi's study highlighted the important role choice plays in the magnitude of dissonance. These investigators demonstrated that under no choice conditions, more opinion change occurred in the subjects who received the discrepant message from the attractive source.

Linder and Worchel (1970) examined the issues of both effort and involvement. They attempted to test the hypothesis that the greater the effort subjects exerted to attain the conclusion to a syllogistic argument, the more they would finally agree with that conclusion; the "conclusion" was that cigarette smoking causes lung cancer.

There were three experimentally manipulated levels of effort and two levels of commitment (or involvement), the latter defined by subjects who smoked and subjects who did not.

For subjects who had highest involvement in the issue (smokers), the amount of effort expended was directly related to attitude change, as predicted by Dissonance theory. The less involved subjects (non-smokers) did not show this effect. One criticism of Linder and Worchel's delineation of involvement, is that many non-smokers could conceivably also score highly on any involvement measure.

Post-choice dissonance increases as the attractiveness of the rejected alternative increases. This was first demonstrated by Brehm in a "free choice" experiment (Brehm, 1956). Students were requested to predecisionally rate eight consumer products for "desirability", then to choose between pairs of these

products, and finally to rate them all again. It was contrived that one item in each pair would always be subjectively "highly desirable", while the complementary item varied in attractiveness, although the latter was always rated less "desirable".

The results showed that dissonance could be increased by increases in the subjective desirability of the rejected (unchosen) item.

If the "attractiveness" of the rejected alternative increased dissonance, the converse was also true, as would perhaps be expected. That is, the greater the negative aspects of the chosen alternative, the greater the dissonance.

A degree of "real-life" flavour is involved in a study by Cohen involving betrothal, an issue of some involvement for the subjects (Brehm and Cohen 1962, p. 78-81).

Yale College students answered "subjective" and "objective" questions on a 71 point response scale, which varied from "not at all" to "extremely". The objective questions involved frequency of other dating, loss of freedom, financial differences, social level differences and difficulty in reaching a decision to marry. The"subjective"questions included:

1) How much does your future seem empty without your fiancee?
2) In general, being as frank as possible, how much would you say you love your girl?
3) How much do you feel that you were "meant for each other"?

Only the "subjective" feelings, not being clearly "reality-based" were expected to change in order to reduce dissonance.

It was expected that the less positive the objective aspect prior to the overt decision (the actual engagement), the greater the post-decisional dissonance, that is, greater discrepancy (see page 14) At the end of the subjects' vacation, the scale was again administered, as the expectations were fulfilled.

This writer considers that Cohen made unwarranted assumptions in the compiling of the various objective questions. For example, the issue of financial discrepancy between the respective families would be irrelevant, at least in the event of the writer contemplating engagement. The investigator should not assume that the objective questions are salient for each subject without providing an experimental check in support.

The greater the number of rejected alternatives, the greater the degree of dissonance. This is because the more alternatives from which one has to choose from, the more one must give up, and consequently, the greater the magnitude of dissonance. The Brehm and Cohen (1959a) study, which illustrates this point, was discussed earlier in this account When children chose between qualitatively similar and qualitatively dissimilar toys, ratings on chosen toys were displaced in a more favourable direction. However, the displacement effect was larger when the choice was made from a larger number of alternatives.

This experiment also exemplifies the effect on the magnitude of dissonance of "cognitive overlap". Specifically, the greater the similarity or "cognitive overlap" between two alternatives, the less the degree of dissonance aroused. Conversely, dissonance is greater when a choice is made between dissimilar alternatives because:

> "what one has to give up relative to what one gains, increases". (Festinger, 1964, p. 373).

In accordance with this, Brehm and Cohen found that the displacement effect of ratings on chosen toys was larger when the choice was made from dissimilar, rather than similar alternatives (toys).

Although there is a lack of further evidence on the question, an early study by Ehrlich, Guttman, Schonback and Mills (1957) suggested that the more recent the decision, the more the dissonance aroused. Ehrlich et al found that owners of brand new cars read advertisements concerning their car, rather than advertisements concerning cars that they had considered, but finally rejected. However, this effect was strongest for owners who had only recently bought a car. The tendency was much less pronounced for owners who had purchased their car a relatively long time ago.

The recency idea has intuitive appeal, but awaits further experimental support.

In a comparison of the Free choice and Forced compliance classes of decision making (page 5), the writer mentioned that the former situation yielded the greater dissonance. In fact, the bulk of evidence supports the idea that choice is perhaps a pre-condition for dissonance to even exist. The choice idea is later elaborated, as it relates to the current study
The Aronson and Carlsmith (1962) study indicated the importance of choice, by suggesting that the less the coercion to induce discrepant commitment, the greater the dissonance aroused. In this study, a table of preferential rankings for five toys was constructed for nursery-school children. Half of the children were "mildly threatened" and the remaining half were

"severely threatened" with regard to playing with a highly regarded toy, (which was ranked second on the table). After being allowed to play with the remaining four toys, the five toys were again ranked.

The results showed that the forbidden toy had decreased in attractiveness as a mode of dissonance reduction more in the "mild threat" condition, than in the "severe threat" condition.

This particular investigation raises ethical considerations. The "severe threat" condition involved an expression of anger, annoyance and rejection of the children at what is an impressionable age. One could perhaps question the ethics involved here.

Several studies have suggested that the greater the frequency of engaging in negative (discrepant) behaviour, the greater the degree of dissonance aroused.

In an investigation by Raven and Fishbein (1961), subjects were given either electric shock or no shock for denying the reception of Extra Sensory Perception (ESP) images.

It was expected that subjects who consistently denied receiving ESP messages would reduce the dissonance between their realisation that they had reported in the negative and the

knowledge that they had accepted punishment (shock), by reducing their belief in ESP. The results confirmed this expectation based on Dissonance theory.

The effects of engaging in counterattitudinal behaviour is an issue that requires much more experimental investigation. However, there has been a limited amount of research in this area. It seems that the more information regarding the negative consequences of his counterattitudinal stand, the greater the degree of dissonance that occurs. A recent study that provided qualified support for this aspect, is a study by Cooper, Zanna and Goethals (1974). Although aversive behavioural consequences (like discovering that an esteemed other person has changed his view as a result of the subject's counterattitudinal essay), can affect the magnitude of dissonance reduction, this depended on the result that lying about an experimental task, only produced attitude change when the subject "misled" a confederate who was liked. Alternatively, when the confederate was not "misled" or when he was disliked (or both), no attitude change occurred.

The degree of justification involved in the commitment to discrepant behaviour obviously has an important part to play in determining the magnitude of

dissonance. Originally, Brehm and Cohen (1962) claimed that the less the justification - financial or otherwise - the greater the resultant dissonance upon commitment to a discrepant act. However, recent evidence has demonstrated that Brehm and Cohen's contention cannot be accepted, without much qualification. This fact has been illustrated by studies utilising financial incentives, which will presently be discussed. However, first to be examined is source attractiveness, which shows that even elements deemed "irrelevant" by Dissonance theory have some bearing on attitude changes.

Specifically, the more negative the characteristics of the communicator, the greater the dissonance experienced if the individual commits himself to discrepant behaviour.

The credibility of a communicator can be divided into two categories of traits. Firstly, a set of traits can be "relevant" to the specific communication involved; amount of expertise is one example. On the other hand, a set of traits can be "irrelevant" to the communication; the communicator's sex, whether he is pleasant or otherwise, are pertinent examples. Zimbardo, Weisenberg, Firestone and Levy (1965), manipulated "irrelevant" positive traits in their study.

There is less justification in engaging in counterattitudinal behaviour as a result of inducement by a

communicator with "irrelevant" negative traits. Therefore, more dissonance and concomitant attitude change, results from such behaviour.

In Zimbardo et al's investigation, attitudes towards eating a disliked food, namely grasshoppers, were measured both before and after persuasive attempts to get subjects to eat the food by a communicator who assumed a positive role for half of the subjects and a negative role for the rest.

Unfortunately, these investigators possibly created an ambiguous figure instead of the negative role that was intended. The supposedly negative communicator was basically friendly, except for one instant when he loses his temper with an assistant.

The subjects who did perform the discrepant act, increased their liking for grasshoppers more following inducement by the negative communicator, than for the positive communicator. Control subjects demonstrated no such change in attitudes. Thus the results were in accordance with Dissonance theory predictions.

In a more recent study, Himmelfarb and Arazi (1974) found that the greatest attitude change occurred in subjects who exposed themselves to a discrepant message from an unattractive source.

Role of Personality Variables

It is clear that personality variables have an effect on the magnitude of dissonance. Self-esteem was one aspect of personality that received early attention in dissonance experiments. In a study by Bramel (1962), subjects were initially given information designed to increase or decrease their self-evaluation, and then were led to believe that they were making homosexual advances. Subjects with raised self-evaluations reduced dissonance by projecting homosexual tendencies onto others.

Kumpf and Götz-Marchand (1973) obtained some interesting results with respect to personality, using engaged female students who sat a fake "Marriage expectancy test". Avoidance mechanisms (derogation of source and under-recall) increased as a function of degree of discrepancy (expectancy-subject's expectation), when three levels of discrepancy were used.

There was also a significant interaction between discrepancy and self-esteem. Subjects with high self-esteem (Feelings of Inadequacy Scale: Janis and Field (1959)), used derogation of communicator most at the highest discrepancy level, while subjects with low self-esteem derogated most in the medium discrepancy condition.

In addition, subjects with higher self-esteem do not conform (that is, accept a discrepant communication) as much as those with lower self-esteem. Persons with low self-esteem tend to devalue the importance of being happily married more than those with high self-esteem. Conformity with result and devaluation of the issues importance are both confrontation mechanisms.

Dissonance theory and its Opponents

With respect to the justification involved in counter-attitudinal behaviour, much research has examined the role of financial incentives. Dissonance theorists claimed that the greater the financial incentive (or justification), the less the dissonance experienced upon the performance of some counter-attitudinal behaviour. The converse is also true. The classic investigation, which has been already discussed, was that of Festinger and Carlsmith (1959). To reiterate, these investigators found more dissonance and concomitant attitude change in subjects paid only $1 as financial incentive, than subjects who received $20 financial incentive to perform a counterattitudinal act.

As investigations on the incentive question burgeoned, dissonance theory faced a "two-pronged" attack.

On the one hand, some investigators obtained the same result that Dissonance theorists predicted, but offered a different theoretical interpretation. Kelley (1967) proposed an explanation in terms of Attribution theory. He suggested that subjects who agreed to the counter-attitudinal task for low incentives incorrectly assume that they are unique in their compliance, and infer that the compliant behaviour is actually consonant with their real attitude.

Kelley's theory does not appear to be supported by concrete evidence. Cooper, Jones and Tuller (1972) varied both levels of incentives and information regarding the compliance of previous subjects, and still found more attitude change in subjects complying for lower incentives. Thus Cooper et al's results did not support Kelley's alternative theoretical explanation.

Rosenberg (1965) suggested that "evaluation apprehension" accounted for greater attitude change in subjects complying for smaller incentives. Subjects did not change their attitudes in the high incentive conditions, because they feared a negative evaluation of their honesty and mental health by the investigator. Both Rosenberg's experimental design and his interpretation have been roundly condemned by many researchers. To

mention just one, Aronson (1966) pointed out that there were many differences between Rosenberg's 1965 study and the study he was intending to replicate (namely, Cohen in Brehm and Cohen, 1962).

The other "prong" of the "two-pronged" attack was perhaps more "piercing". Some investigators discovered a different result than that predicted by Dissonance theorists, and in some cases an alternative explanation was put forward.

The most powerful of such theories is Incentive theory. Stated simply, this theory holds that the greater the amount of financial inducement, the greater the actual attitude change. Elms and Janis (1965) performed a study that they interpreted as being supportive of incentive theory. Subjects were paid either $0.50, $1.50, $5 or $10 to write an anonymous essay counter to their viewpoint (advocating that qualified U.S.A. students should be sent to Russia for a period of four years). Either negative or positive sponsorship of such a scheme was also provided, as well as the presence or absence of role playing.

The results showed that only one of the ten experimental groups showed significant attitude change. The subjects who were paid the maximum financial incentive ($10), under favourable sponsorship conditions,

showed more attitude change than subjects paid the minimum financial incentive. Thus, attitude change occurred in such a fashion that Incentive theory, and not Dissonance theory, was supported. A number of studies obtained results supportive of Incentive theory. Yet other studies were obtaining results that supported the dissonance effect - an inverse relationship between amount of financial incentive and attitude change.

Carlsmith, Collins and Helmreich (1966) shed some light on the debate when they managed to produce a dissonance and an incentive effect, but under different optimum conditions. Carlsmith et al discovered that subjects who engaged in a "face-to-face" confrontation (role play) condition, showed a negative relationship between money offered($0.50, $1.50 and $5) and attitude change. Conversely, subjects who had written a counterattitudinal essay showed a positive relationship between attitude change and amount of financial incentive offered.

Frey and Irle (1972) noticed similarities in the conditions that yielded an incentive effect and the conditions that yielded a dissonance effect. These investigators suggested the following scheme:

Choice/Public Conditions	Dissonant effect (that is, negative relationship between amount of incentive and attitude change).

No choice/Anonymous conditions	Incentive effect (that is, positive relationship between amount of incentive and attitude change).

If a person was allowed a high degree of "choice" as to whether to perform a counterattitudinal behaviour or not, and if he performed such an act in "public", a dissonance effect would result.

On the other hand, if he has "no choice" as to whether to perform counterattitudinally and if he performed such an act "anonymously", an incentive effect would result.

To return to the Carlsmith et al study, "face to face" role playing was the relatively public condition, while the essay writing condition was relatively anonymous. This experiment provided one of the necessary pre-conditions for the dissonance and incentive effect to occur, according to Frey and Irle. Linder, Cooper and Jones (1967) examined the other component, namely "choice". Linder et al found an incentive effect under "no choice" conditions and a dissonance effect under "choice" conditions.

Both of these studies provided results that were consistent with Frey and Irle's hypothesis. What was required was an investigation that would vary "incentive" under both "choice/public"and "no choice/anonymous"

conditions. Frey and Irle obtained results that were supportive of their hypothesis, and also statistically significant. They also obtained non-significant incentive effects with no-choice/public, no-choice/anonymous, and control conditions.

CHAPTER II

RATIONALE AND AIMS OF THE CURRENT STUDY (Including Experimental Hypotheses)

In the formulation of their hypotheses Frey and Irle (1972) considered only three variables which, to reiterate, included Choice, degree of Public exposure and Financial Incentive. In reaching their compromise to the Dissonance-Incentive theoretical controversy, it appears that Frey and Irle have been too arbitrary and overly simplistic in their choice of variables.

The writer was interested in the effects of introducing an additional variable, while retaining the combinations of Frey and Irle's variables. Would consideration of such an additional variable, such as each subject's personal Involvement in the issues featured in the counterattitudinal task, yield results other than those Frey and Irle would predict?

The effect of the additional Involvement was examined by examination of the following experimental hypotheses.

Hypothesis 1: The effect on the dependent variable attitude change of the variable Involvement will be at least equal to that of Choice, Relative Publicity[1] and Financial Incentive.

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[1] This term corresponds identically to the variable Frey and Irle describe as Public/Anonymous.

The final three hypotheses are simply those of Frey and Irle reproduced verbatim.

Hypothesis 2 (i) In the choice/public condition there is a dissonance effect.

(ii) In the no choice/anonymous condition there is an incentive effect.

(iii) In the choice/anonymous and the no choice/public condition, no clear dissonance or incentive effects are expected.[2] (Frey and Irle, 1972, p. 47).

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[2]This has still been reproduced verbatim, despite it being technically incorrect in that a null hypothesis has been presented here, instead of an experimental hypothesis.

CHAPTER III

EXPERIMENTAL DESIGN

a) Subjects

A total of 100 subjects were recruited from several classes of trainee nurses attached either to the Christchurch Public Hospital or the Christchurch Technical Institute. Although only 78 subjects were required the additional 22 subjects represent the inevitable minority of subjects who refuse to comply with the counterattitudinal task, or whose results had to be eliminated from analysis. Thus, for each of the 12 experimental groups, as well as the sole control group, a minimum of six subjects were randomly allocated; for the above-mentioned reason, some groups initially had 1-2 more subjects than the required minimum.

The choice of trainee nurses was made for two major reasons, the first being the approximate homogeneity of such a population, with respect to sex, educational level, economic position and age.

Sex differences in dissonance research have been largely overlooked. Yet sex differences definitely can affect the results of dissonance experiments in the view of Kumpf and Götz-Marchand (1973). McGuire (1968)

maintained that "influenceability" was greater for males than for females.

There was some homogeneity with regard to education, as a certain minimum level is required for acceptance as a trainee nurse.

Reasonable homogeneity of financial standing was attained, as no subject was in a high income-earning bracket, although there was some degree of variation between subjects nevertheless. However, it is important that some attempt be made to ensure that some homogeneity pertains to financial standing in dissonance research. Obviously, a millionaire and a pauper will place a different real value assessment of the worth of a $3.00 incentive.

All subjects recruited (with one exception[1]) could be described as "young", their ages falling approximately within the 17-26 age group.

The second major reason for use of this particular population is that it is non-university student in nature. Too much research is based on the university student population despite its differences with the general public to whom such results are readily extrapolated. For dissonance research another problem

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[1]This subject was atypical in that she was middleaged; her result was eliminated from analysis for this reason after consideration.

arises from this. Much of dissonance research is confounded by the fact that the real reason for compliance is not amount of incentive, but desire to appease the student's examiner, to avoid giving a negative impression and to meet partial course requirements.

This study was free of such confounding, because the experimenter was in no way associated with scholastic assessment of the trainee nurses who served as subjects.

Many investigators have provided financial incentive to potential subjects at the recruitment stage, which would seem to be an uncontrolled variable. That is, some subjects may end up writing a counterattitudinal essay because of such an uncontrolled variable. Carlsmith et al (1966), for example, paid a recruitment fee of $2.50. This figure is in excess of the two lower levels of financial incentive ($0.50 and $1.50) that they provided. Therefore, the recruitment fee may have the undesirable effect of decreasing the relative difference between the different incentive levels.

In accordance with this criticism, the experimenter did not offer prospective subjects any recruitment fee, but instead made a standardized mention of financial remuneration during Phase I of the experiment.

b) Overview of Procedure

A booklet consisting of an Involvement and an Attitude questionnaire was constructed[2]. On the first questionnaire, a person could indicate his degree of personal involvement (by use of a 13 point scale), for each of thirty statements involving different issues. The second questionnaire allowed a person to express the extent of agreement or disagreement with each of the same statements, by use of a seven point Likert-type scale.

During experimental Phase I of the study, this questionnaire booklet was administered to successive classes of trainee nurses, at either Christchurch Public Hospital or the Christchurch Technical Institute (School of Nursing).

After appropriate introduction of himself, the experimenter (E) handed out the booklets, and explained the simple procedure for their completion. After ensuring that there were no queries, E requested that the trainee nurses commence writing.

After ten minutes of writing, E requested the class's attention. He explained the detachable Recruitment (Appointment) cards, and briefly, carefully

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[2]See Appendices A and B.

avoiding any detail, mentioned Phase II and II of the study. However, E did point out that he was unable to say very much about the study as their knowledge could adversely influence the results, but that he would explain everything when it was finished.

An accurate indication of time commitment was given, for those trainee nurses intending to complete all phases.

No idea of the financial manipulations was imparted, although the class was told that some money from "research funds" was available.

E explained the exact location of the experimental setting for the final two phases of the study. He wrote the week from which trainee nurses could choose a time. They were asked to write the selected time on one Recruitment card, and take the second card with them when they had finished the questionnaire booklet. (The second card had details of the location of the experimental setting, as well as E's telephone number). The trainee nurses were requested to inform E if they found themselves unable to keep their appointment.

The class was then asked to finish their booklets, and leave quietly when they had done so.

For each subject, there was an average of five days delay until experimental Phase II. During this time, E prepared for Phase II. Examination of the completed questionnaire booklets revealed the necessity of contacting some subjects, who had chosen the same time as others, so that a new time could be scheduled. Other subjects were contacted because their intentions as regards their appointment time was unclear.

For each subject's completed booklet, E was able to choose an issue statement of Low, Medium and High personal Involvement, by examining the Involvement questionnaire. By a random selection technique, a statement representing the highest scaled value, the lowest scale value, and the most intermediate scale value, was chosen to represent the High, Low and Medium involving issues, respectively.

However, to be chosen such statements had to be scored consistently on both questionnaires and not scored as Undecided on the Attitude questionnaire.

Assignment sheets were then prepared for each subject, by phrasing each of the three chosen statements such that counterattitudinal headings resulted.

The experimental setting for Phase II (and II) of the study consisted of an "office-type" room (Experimental Room 1), and an adjoining larger lecture

hall (Experimental Room 2). The room and materials were organised to allow an acceptably high level of standardization of procedure. In addition, E maintained a consistent manner and mode of dress for all subjects.

Each subject was randomly allocated to each of the 12 Experimental and one Control groups, in such a way that the first complying thirteen of these became the first member of such groups. As she arrived, each subject was shown to the appropriate seat in Experimental Room 1.

For all subjects, E repeated his comments concerning his authority to conduct his study, to provide reassurance. Additionally, reassurance concerning eventual debriefing was also given.

Choice/Public (or Anonymous) Groups (All levels of financial Incentive $5, $3 and $1)

With reference to Fig. 3 (p. 60), this pattern of condition refers to groups A to F (inclusive).

Early on in the initial interview, the subject's free choice as to whether she complied with E's request or refused was emphasised.

E then produced the three headed sheets, each with a counterattitudinal heading, representing that particular subject's issues of Low, Medium and High

personal involvement. E explained the experimental task, which was to write convincing and persuasive points in support of the counterattitudinal heading, for five minutes per sheet.

E then informed the subject of the financial Incentive, which was $5.00, $3.00 or $1.00, depending on the experimental group to which the particular subject had been allocated.

The Choice/Public subjects were informed their assignments would need to be signed and that, during experimental Phase III, they would be asked to defend these "to an Assistant of mine". The Choice/Anonymous were merely told that their assignments would not have to be signed, and their effort would be relatively anonymous.

After another reminder of their Choice, E timed their decision to either comply or refuse.

Subjects who complied were handed their first sheet, a pen and the appropriate financial incentive and shown to the adjoining experimental room 2. The stop-watch was set, and the subject reminded of the time limit. The subject was left alone in Room 2, except for E returning to collect and deliver sheets.

Non-complying subjects were thanked for their cooperation to date, and asked "for experimental reasons" why they could not comply. The terminal procedure used with the complying subjects was then employed.

When the subjects had completed their third assignment, they were handed a questionnaire booklet (untimed) which was identical to that used for Phase I, except that the order of the statements had been randomized. This provided a measure of any Initial attitude change.

When the questionnaire booklet was finished, the Phase III appointment was made seven days (∓1) into the future. "Limited period" secrecy was requested, until E attended them, during which he would debrief in full.

No Choice/Public (or Anonymous) Groups (All levels of financial Incentive $5, $3 and $1)

With reference to Fig. 3 (p. 60), this pattern of conditions refers to groups G to L (inclusive).

This procedure was identical to that used by the other six groups, except that Choice was not emphasised. In displaying the assignment sheets, E was informing the subject of what she "was required" to do.

At the end of his description of the task and other concomitants E was slightly "pushy" in telling her "you had best get started".

All other details were identical to the Choice groups.

Control Group (M)

These subjects were initially greeted and reassured as to E's authority, as were the Experimental subjects. They were then given the questionnaire booklet (second edition) to complete. When they had completed this (in Room 2), E arranged an appointment for Phase III in identical manner as employed with the Experimental subjects.

In experimental Phase III, all subjects were greeted, and then shown into Room 2, with instructions to do the questionnaire booklet again. Once again, the booklet was identical in content with only the order of the statements randomized. This administration of the booklet, provided a measure of the temporal stability of any attitude change over a period of approximately seven days. It also would possibly highlight any differences or similarities between the Experimental and the Control subjects. It also allowed an examination of Involvement of the three issues across time and across groups.

When she had completed the booklet, each subject was shown into experimental Room 2, for the final interview. Firstly, each subject was requested to rate, on a thirteen point scale (see p. 77), how much choice they felt E gave them, in their decision to comply or refuse. Secondly, on another thirteen point scale, subjects were asked to rate how persuasive they had made their essays, after having re-read them. Both ratings were read back to the subject to ensure no mistakes had occurred.

For most subjects, the remainder of the interview was tape-recorded, after they were cautioned about the need for frank answers to the questions to be put. In the following order, E asked the following questions. The adherence of subjects to the "limited period" of secrecy, was checked, in a manner likely to encourage honesty and calmness. Suspected breaches were thoroughly probed, and such subjects requested to furnish the names of respondents, thus providing a counter-check. E then checked the validity of the task, thus ensuring that each experimental subject really had written three counterattitudinal assignments. He also asked them to give a reason for their counterattitudinal compliance with E's request. E checked to ensure no subject had managed to work out the purpose of the

study, carefully probing any possible partial insights. The credibility of E was checked, to ensure each Public subject believed she would be required to publicly defend her counterattitudinal assignments, and that each Anonymous subject believed the anonymity of her completed assignments would be respected.

E then asked a series of questions designed to gauge general and specific reactions of each subject to the study. Their willingness to participate in a similar study, if asked, was inquired of. They were asked to assess what their "best friend" would think of their writing assignments counter to their true personal views. Each subject was asked to comment on the amount of effort expended on each assignment and to rank each one relative to the others. They were asked how pleasant they found the task, and their mood during it. They were asked how they would feel about being asked to defend their assignments in a couple of months time, and whether or not (if asked), they would agree to such a request. Finally, they were asked for any additional comments concerning the study.

Phase III concluded with E stressing the need for continued secrecy, until he arrived at their class to debrief the subjects. Each subject was thanked for her participation and shown out.

c) Procedure

1) Preliminary

(i) Construction of booklet containing the Attitude and the Personal Involvement Questionnaires (see Appendices A and B)

Initially, three acquaintances generated a list of issues likely to be of high personal importance and of low personal importance to them. From the raw material of these three lists, the writer created 30 statements, 15 of which were favourably phrased and the remainder unfavourably phrased. As an approximate guide, the Experimenter attempted to select 10 issues that were highly important to him, 10 that were moderately important, and 10 that were of minimal personal importance. Care was taken to ensure that the 30 statements involving the 30 issues were not ambiguous, were easily understood, and were not "double-barrelled". The final 30 issue statements were randomised to form the items of the Involvement questionnaire, and again randomised to form the Attitude questionnaire.

As a safeguard against order effects, this pool of 30 items was completely randomized to form a fresh booklet for each successive administration. That is, three booklets, each with a different ordering of items, were produced to correspond to each of the three Experimental phases.

Although the Experimenter verbally outlined the instructions concerning the completion of the booklet, to ensure that no confusion could occur, simple written instructions accompanied each booklet.

Within the booklet the Attitude questionnaire (Appendix B) incorporated a Likert-type scale, which ranged from 7 (Strongly Agree) to 1 (Strongly Disagree) and included a mid-point allowing for undecided responses (4 Undecided). In the column to the immediate right of each statement each subject had space to write a number from the scale, which best indicated to what extent they agreed or disagreed with the same.

The Involvement questionnaire (Appendix A) incorporated a scale which ranged from 13 (Extremely Important to Me) to 1 (Not Important to Me at All). To the right of the statements was a column labelled 'Degree of Importance to Me', where the subjects could write one of the scale numbers which best corresponded to the personal importance each statement held for them.

The second column was labelled 'Agree (✓) or Disagree (x)' and allowed subjects to specify whether they agreed or disagreed with each item. This column provided an experimental check on the consistency of the

subject's agreement or disagreement as indicated on the Attitude questionnaire.

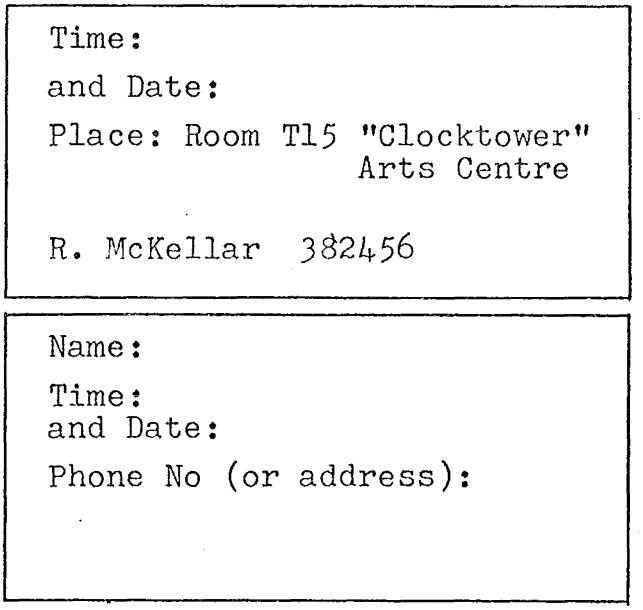
(ii) Recruitment Cards

The first Experimental phase, during which the 100 volunteers were to be recruited, was subject to a specified time limitation and a large volume of trainee nurses to deal with. Thus, the recruitment and allocation of appointment times had to be efficient to avoid chaos.

Two detachable cards accompanied each booklet to be eventually distributed during the Experimental phase I. Examples of such cards appear below.

FIGURE 1

Recruitment or Appointment Cards



The use of the recruitment cards is explained in Experimental Phase I.

2) Experimental Phase I

The first phase of the experiment took place at nursing tuition classes, initially at the Christchurch School of Nursing, and later at the Department of Nursing, Christchurch Technical Institute. The first class was visited on 26th January, 1977 between the approximate times of 4.45p.m.-5.00p.m. Other classes followed in succession, until 12th April, 1977. A total of three hospital and one technical classes were eventually visited until subject requirements were fulfilled.[3]

Each class anticipated the Experimenter's arrival and he was shown into the room by the tutor who then left. E introduced himself with a brief undetailed description of his research. E simply stated that he was doing a thesis concerning people's views on different issues and that there were three parts to his experiment. This yielded virtually no idea of the aims implicated.

To provide any reassurance that may be needed, E mentioned the authority under which he had obtained

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[3]All three classes of School of Nurses trainees were seen, successively, at this time slot. The Christchurch Technical Institute trainees were administered Phase I of the experiment between 9.00a.m.-9.30a.m. on Friday, 18th March, 1977. The final seven subjects were administered Phase I on Wednesday, 20th April, 1977 at the Institute.

permission to carry out his research.[4] E stated that he hoped as many people as possible would take part in the study as subjects.

At this point, the booklets consisting of the two questionnaires were quickly distributed. When the booklet was in front of each person, E verbally explained the instructions of the Personal Importance and the Attitude questionnaires in that order (refer to Appendices A and B). The subjects were instructed to start as soon as they had read the written instructions. They were also told not to hesitate to put up their hands if they were unclear on any aspect of the instructions.

After 10 minutes when it was anticipated that subjects would only partly be finished[5], E interrupted and asked for their attention to explain the Recruitment (Appointment) cards and how they related to the next experimental phase (Phase II).

E addressed the class as follows: "You will have noticed that there are two detachable (Recruitment) cards clipped to the booklet. Each card has a code number which has the same corresponding number on the

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[4] In the case of the hospital trainees, Miss Newman was mentioned. With respect to the technical trainees, both the Education Department and Miss Johnson were mentioned.

[5] Some idea of the average time to complete the booklet was gained from a pre-experimental pilot study.

top left hand corner of the booklet itself. Thus, your questionnaires will only be number-coded, so I can contact people if required, but these are not named in any way. Your name will only be on the card, which will be detached from the booklet. These are really 'appointment' cards for the next phase of this study. The next phase involves a task that requires more time, perhaps 48 minutes, but is still quite simple. During the next phase, people will have to do three short written assignments, followed by two brief questionnaires.

I am unable to tell you too much more about the requirements of the next phase, or the final phase that completes the study, as your knowledge could adversely affect the results. However, when everyone has completed the third and final phase, I will then be free to explain the exact nature of the study, and answer any questions that arise.

Incidentally, there is some money involved for those who participate in the final two phases, as some research funds have been made available for this study. The next two phases of the study will be held at Room T15 in the 'Clocktower' at the Arts Centre in Worcester Street". (This address E wrote on the blackboard. As a safeguard, E also explained the exact location of the Arts Centre, as well as the experimental rooms).

On the blackboard, E wrote the names of seven consecutive days and their corresponding dates. The days so displayed ranged from three to nine days from Phase I. E continued as follows:

"I would like each volunteer to choose any time that suits from one of the seven days written on the blackboard. As you can see these range from Saturday 29th January, until Friday 4th February[6]. Then write the time and date that you have chosen on each 'appointment' card. On one card please write your telephone number (preferably) or your address if you are not on the telephone. Please also put your name in the space specified on the bottom card.

When you have finished your booklet, take the top appointment card, which has my name and telephone number, and leave the bottom card so that I know when to expect each of you. If some unforeseen difficulty prevents you from coming at the appointed time, I would appreciate your contacting me in advance, so we can arrange an alternative time.

You may finish off the questionnaires now. When the booklets and appointment cards are completed, you may quietly leave, taking the top card with you.

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[6] The ideal would be the administration of Phase II on exactly the same number of days hence from Phase I, for all subjects. The realities of the situation dictated otherwise, due to the variable hours worked by the trainee nurses. Thus, by random allocation of subjects to a temporal sequence of the 12 conditions (i.e. S_1 Choice/Public - H_1, S_2 Choice/Public-Med etc.) it was expected that the average time delay between Phase I and II for each group, would be approximately equal.

Do not hesitate to put up your hand if anything needs changing. Thank you".

When the last trainee had finished, E collected up the booklets and left. There was a lot of preparatory work for Phase II to be completed.

3) Preliminary to Experimental Phase II

The returned booklets were scrutinised to determine how many trainees had volunteered as subjects for the rest of the study. A majority of the trainees did complete the booklet. However, in the last three classes visited only a minority[7] of such trainees had filled in the Recruitment cards (described to the trainees as 'Appointment' cards). Thus, most trainees had complied with the instructions of Phase I, but then opted out of the latter two experimental phases.

The Recruitment cards of the volunteer trainees (now referred to as 'subjects') were carefully examined. It was inevitable that some degree of "double-booking" would occur. Thus, several subjects had to be phoned to determine an alternative appointment time, which was accomplished with ease. Other subjects were contacted to clarify such specified times as "any time on Thursday" and the like. A handful of potential subjects had filled out all details except

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[7] In contrast, a majority of the fourth class (technical trainees) volunteered for the rest of the experiment (approximately 90 per cent).

their name; none of these people turned up, which effectively resolved any difficulties. Each subject was assigned one separate place in an appointment book.

The next task was to determine an issue of Low, Medium and High personal involvement for each individual subject. Firstly, for a particular subject, the numerical responses to the items of the Involvement questionnaire were noted. In particular, the range of the numbers was considered. An item with the lowest number was chosen as the issue of Low personal involvement. An item with the highest numerical rating was chosen as the issue of High personal involvement. The item with the most intermediary rating (between High and Low) was chosen as the Medium involving issue.[8]

However, before selection was effected, the consistency of these three items, with respect to Agreement or Disagreement, was checked. This could be readily achieved by a comparison of the rating given in the Attitude questionnaire, with that of the second column of the Involvement questionnaire ('Agree(✓) or Disagree (x)'). In practice, several items were rejected because they indicated agreement on one

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[8] This presented no difficulties if there was a straightforward range like 1-7-13. However, if the distances between the most extreme values and the intermediate rating were uneven, by convention, the higher rating was chosen as the Medium involving issue (i.e. 1-7-13).

questionnaire and disagreement on the other. The reason for such incongruous responding perhaps results from misreading of the particular item in question.[9]

Also eliminated were items where the subject indicated either Agreement or Disagreement on the Involvement questionnaire (second column), but indecision (i.e. 4='undecided') in the Attitude questionnaire. Naturally, often there were several identically Low or High ratings. Strict use of a die determined that the chosen item was randomly selected.

Once the three issues had been chosen, the assignment sheets were prepared. This simply involved heading each of three sheets of lined paper, with one of the chosen issue statements, phrased in such a way to represent the opposite of the particular subject's attitude. For example, if the subject indicated agreement with the item:

> "Marijuana smoking should be legalised in New Zealand",

then the counterattitudinal heading became:

> "Marijuana smoking should not be legalised in New Zealand".

Therefore, for each experimental subject there were three sheets each headed with one of three counterattitudinally phrased issue statements.

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[9]The inclusion of the second column in the Involvement questionnaire as an experimental check proved to be more than merely pedantic, as incongruous responding indicated.

As noted earlier the items of the first booklet (Phase I), were again randomised to yield a second booklet for Phase II. Apart from the differences in item ordering the second booklet was otherwise identical to the first.

Standard sized white envelopes containing alternately $5, $3 and $1 were prepared, which served as representing the three levels of financial incentive.

Ballpoint pens, appointment cards and a stop-watch completed the requirements for experimental Phase II.

4) Experimental Phase II

The Experimental Setting

Some care was taken to standardise the procedure as much as was possible, and this required attention to the organisation of the experimental setting. A secondary reason for a reasonably high degree of organisation, was the large number of subjects who were scheduled within certain restricted intervals of time (There had been an unavoidable tendency for subjects to cluster on particular days).

When subjects arrived at the main foyer of the Arts Centre (in the Clocktower), they encountered a sign indicating the exact whereabouts of the experimental

room (T15). In addition, the Secretary of the Arts Centre was instructed to appropriately direct any subjects who arrived at her office. These two precautions were of course, additional to the instructions E had delivered during experimental Phase I. The door of the experimental room had a further notice with relevant details. It was unlikely that any subject would fail to arrive at the correct destination[10].

Two chairs were provided in the hallway for any subjects who had to wait a while. Also, occassionally subjects arrived early.

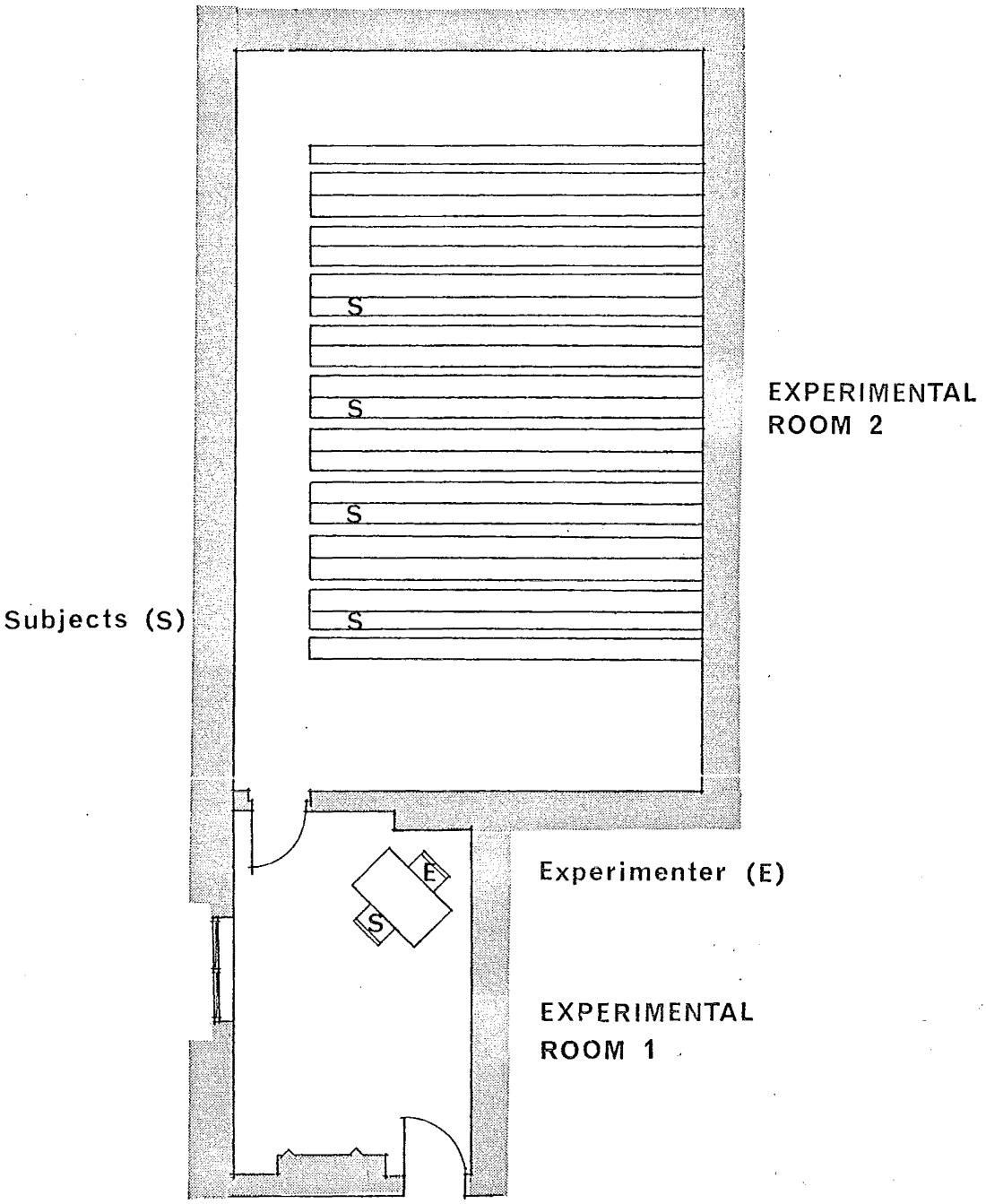
The experimental setting proper consisted of a medium sized "office-type" room (called Experimental Room 1) and an adjoining considerably larger lecture hall, with a tiered layout of desk rows (called Experimental Room 2)(see Figure 2, p. 58).

To one side of the first room was a large office desk as indicated in the diagram (next page). E's chair was placed on one side, while the subjects chair was placed on the other. Most materials were kept in desk drawers, so that they could be readily presented at the appropriate times. Initially, when each subject was first seated, the desk was bare, with the exception of E's written procedural instructions

[10]One subject still managed to lose her way, having left her Recruitment ('appointment') card behind. She tried to reach the destination by trial-and-error, and finally arrived very late.

FIGURE 2

Experimental Setting for Phases II and III



which concealed the appointment book.

As much as was possible, E maintained a consistent, neat mode of attire. (This was maintained for all three phases of the experiment). The important role of what Festinger called "Irrelevant" cognitive elements in attitude change has been stressed by other researchers, notably Zimbardo et al (1965) and Aronson and Golden (1962). In the context of this study, if E had been dressed markedly differently while experimenting with different subjects such a cognitively "Irrelevant" element could have differentially affected attitude change, according to Dissonance theory (Festinger, 1957, p. 11).

An equally significant cognitively "Irrelevant" element is the effect of E's manner on the subjects. A neutral manner would probably be perceived as indifference, and would thus have a negative effect. In addition, it would have been a difficult facade for E to consistently uphold. Therefore E attempted to maintain a slightly friendly, courteous manner throughout the experiment.

FIGURE 3

Experimental layout for Groups A to M illustrating the combinations of variables Choice, Relative Publicity, Financial Incentive and Involvement

Choice	Relative Publicity	Financial Incentive	Group Name	Involvement: High / Moderate / Low
Choice	Public	Hi Inc	A	
		Med Inc	B	
		Lo Inc	C	
	Anon	Hi Inc	D	
		Med Inc	E	
		Lo Inc	F	
No Choice	Public	Hi Inc	G	
		Med Inc	H	
		Lo Inc	I	
	Anon	Hi Inc	J	
		Med Inc	K	
		Lo Inc	L	
	Control		M	

Choice/Public (or Anonymous) Groups (All levels of Incentive $5, $3 and $1)

This refers to groups A to F, as indicated in Figure 3.

To eliminate any sequence effects, each subject was allocated to a different group, as she arrived which was mentioned earlier.

When each subject arrived, she was seated at the desk as indicated in Fig. 2. Once seated, E began as follows:

"Firstly, thank you for coming. This experiment being conducted is part of a thesis, which requires me to see quite a few people. I originally approached Miss Newman[11] and she gave me permission to do this experiment. I am explaining this because people may wonder by whose authority I am interviewing nurses.

You may wonder what this experiment is all about and where it is leading. I want to reassure you that I will explain in full the nature of the experiment and answer any questions at the completion of all experimenting. If I explained anything now, it would adversely affect the results of this study.

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[11] Thus, this reassurance was repeated as a precaution in case any subjects did not hear, or alternatively as a reminder. Of course, when interviewing the technical trainees, the Education Department and Miss Johnson were cited - not Miss Newman. The effort to reassure was quite important for some subjects. For example, one subject was concerned about my possibly using the questionnaire information to discredit her.

Before I tell you what I would like you to do, I wish to stress that the decision to comply or refuse is completely up to you. You do not have to do the task, although it will not take you long".

At this point E produced the three assignments and displayed them in front of S so that she could read all three counterattitudinal headings at a glance. After allowing a pause for S to read the headings, E continued:

"I would like you to write as many points as you can in support of each of three statements, which you see here at the top of these three pages. You will have exactly five minutes to write on each one. You need to make your points as convincing and persuasive as you are able. At the end of the first five minutes I will take your first sheet and give you the second headed sheet. When you have finished the second sheet, I will give you the third headed sheet so you can write your third assignment.

I realise that you may not agree with the statements, so if you are prepared to write the assignments you will be paid $ (5, 2 or 1) immediately out of available research funds provided for the purpose".

When addressing the Choice/Public subjects (groups A, B and C) E said:

"Your completed sheets will need to be signed, so that your effort will not be anonymous. I am asking each person if they would mind coming just once more. If you agree to the task you will be asked to briefly defend what you have written to an assistant of mine. (Other nurses will be doing something else for the same period of time).

This is what is required of you. Remember the choice is yours. Do you want to write the assignments?"

When addressing the Choice/Anonymous subjects (groups D, E and F) E said (instead):

"Your completed sheets do not have to be signed so that your effort will be anonymous. No-one else will see the completed sheets. This is what is required of you. Remember the choice is yours. Do you want to write the assignments?"

For both the Choice/Anonymous and the Choice/Public groups, the above question was followed by the stop-watch timing of the subjects decision either to comply with or refuse the task of writing the three counterattitudinal assignments.

In terms of Festinger's theory the predecisional latency was a measure of conflict as opposed to the post-decisional dissonance experienced by subjects who complied. Once the S had reached a decision, E immediately handed her the appropriate amount of money, which was $5.00 for the High incentive subjects, $3.00 for the Medium incentive subjects, and $1.00 for the Low incentive subjects. Of course, this money was enclosed within the standard white envelopes mentioned earlier.

In addition to the financial incentive S was handed the first counterattitudinal assignment sheet and a pen, and personally shown to a seat in the adjoining room. As soon as S was seated with the first sheet in front of her, E reminded her of the time limit by stating:

"You have exactly five minutes from now", and simultaneously set the stop-watch in full view.

E then left S and returned to Experimental Room 1, allowing completion of the first assignment without the extra apprehension that may have resulted from his presence.

Non-complying subjects were thanked for their cooperation until this point of the study, and were

asked to give the reason for their decision as it was needed "for experimental reasons". E then dismissed these subjects, with the same comments concerning his intention to attend a class in the near future to debrief all participants, but cautioned them concerning the need for secrecy until then.

When 4 minutes 50 seconds had elapsed, E returned to the lecture room preparatory to receiving the first assignment. Thus, for all subjects, the cue of E opening the door and appearing occur identically. E approached S and said:

"You may finish the point you are writing on".

The Choice/Anonymous subjects were then handed the second assignment with the repeated comment:

"You have exactly five minutes from now".

The stop-watch was again simultaneously set for the next five minute period.

The procedure was identical for the Choice/Public subjects with the exception that E checked to ensure that S had signed the completed assignment. The occassional subject who had omitted this requirement was reminded with the comment:

"Would you like to sign it please".

Even here, the request was phrased in such a manner as to be consistent with a choice situation.

As each assignment was collected, it was simply placed on a window ledge immediately adjacent to S. E returned to Experimental Room 1 without the assignment(s). This procedure was designed to reduce immediate apprehension as to what E might be thinking about their counterattitudinal points which may have detracted from their immediate task at hand (the writing of their successive assignment).

Upon the completion of the third assignment, S was handed the (newly randomized) booklet containing the same Attitude and Involvement questionnaires they had done during experimental Phase I. E also said:

"Would you mind also doing these two questions, which are similar to the ones you did last time. They are not timed".

When the booklet was finished, S was directed to Experimental Room 1 and once again seated.

The Choice/Anonymous subjects were addressed as follows:

"I need to see you briefly once more to determine your reaction to the experiment. It is best that we meet as close as possible to seven days time."

A Phase III appointment time was then made, and, as S watched, E wrote the subject code number

(not the name) beside the specified time and day. As the appointment was made E ensured S realized some anonymity was being respected by repeating the code number as he wrote. S was additionally given an appropriately filled out appointment card corresponding to Phase III.

There were some differences in the procedure for the Choice/Public condition subjects. Once seated, these subjects were addressed as follows:

"As I mentioned, I need to see you briefly once more. It is best that we meet as close as possible to seven days time".

However, while arranging the appointment for experimental Phase III, E sought to emphasize the relative publicity of S's requirements. With the appointment book in S's view, E repeated her name as he wrote this beside the specified time and day. Once again, S was given a new appointment card as a reminder of her Phase III commitment.

As both the Choice/Anonymous and the Choice/Public subjects were handed their Phase III appointment cards, the concluding remarks were addressed to each subject:

"Finally, when all experimenting is complete, I will attend your class on studyday to explain the exact nature of the study and your role in it. You will also be welcome to ask me any questions.

It is important to the results of this experiment that you do not discuss any aspect of what you were required to do with anyone, until the study is completed. I would like you to agree not to discuss anything until the experiment is over, and I attend your class".

At this point E paused for affirmation of his request, which was readily given.

The reminder concerning debriefing was important both as reassurance that they would not be "left in the dark", and as a counter for the questions subjects often tried to ask, while we were arranging their Phase III appointment.

The reasons for the "limited period" secrecy are fairly self-evident, notably as they would relate to prior expectations of the subjects who had been spoken to.

A limited period of secrecy is considerably more realistic than the more commonly used request to "never breathe a word of this". The latter approach cannot be monitored and is unlikely to be adhered to anyway, as people have a strong tendency to talk about such novel experiences.

The more realistic request of a "limited period" of secrecy was more likely to be upheld, as it promised an eventual release for their (often very pressing) thoughts coupled with the valid reason E gave them for his request.

In addition, the approach used by this study of monitoring the success of the secrecy request entailed a more reliable means than the usual one of simply asking a question (and nothing else). More specifics of such monitoring are included in the Phase III section.

Unlike the approach of Nuttin (1975) and others, this study incorporated no requirement of a formal signed secrecy declaration, as this could affect the anonymity of the anonymous condition subjects. It would also tend to reduce the distance between the anonymous subjects at one end of the relative publicity continuum, and the public subjects at the other.

The above comments in no way relate to Phase II, as the counterattitudinal task is already completed, and any attitude change already measured by the second administration of the Attitude questionnaire.

However, the Attitude questionnaire was still to be administered a third time (Phase III) and it is here that a signed declaration may have had its uncontrolled effect.

No Choice/Public (or Anonymous) Groups (All levels of Incentive; $5, $3 and $1).

This refers to groups G to L, as indicated on Figure 3 (see p. 60).

The introductory procedure for subjects of these six groups was identical (word for word) to that experienced by groups A to F (Refer p. 61).

However, the procedure dealing with the explanation of the counterattitudinal task was different in accordance with the intention to give subjects relatively "No choice" as regards refusal or compliance. After displaying the three assignment sheets in front of S, E said:

"I will now turn to what you are required to do. You are required to write as many points as you can in support of each of three statements, which you see here at the top of these three pages. You will have exactly five minutes to write on each one. You are required to make your points as convincing and persuasive as you are able. At the end of the first five minutes, I will take your first sheet and will give you the second headed sheet. When you

have finished the second sheet, I will give you the third headed sheet so you can write your third assignment. I realise that you may not agree with the statements so you will be paid $($5, $3 or $1) immediately out of available research funds provided for the purpose".

When addressing the public condition subjects (Groups G, H and I), E said:

"Your completed sheets will need to be signed so that your effort will not be anonymous. I am asking each person to come again once more. You will be expected to briefly defend what you have written to an assistant of mine (Other nurses will be doing something else for the same period of time). This is what is required of you. Now here is the first headed sheet, you had best get started".

The last part of these instructions were intended to be slightly "pushy", minimizing any sense of choice.

The decision time was taken, the appropriate financial incentive handed over, and S was started on her assignments in identical manner to that of the six choice groups (Groups A to F).

When addressing the No Choice/Anonymous subjects (Groups J, L and L), E said:

"Your completed sheets do not have to be signed, so that your effort will be anonymous. No one else will see the completed sheets. This is what is required of you. Now here is the first headed sheet. You had best get started".

Again, the decision time was taken, the financial incentive delivered, and S directed to start the first of the three assignments. The delivery collection and timing of the three counterattitudinal assignments was identical with the procedure used with the Choice (Public and Anonymous) subjects (Groups A to F). However, the presentation of the questionnaire booklet involved more of a mild demand than a request. E said:

"Here are two questionnaires to do, which are similar to the ones you did last time. They are not timed".

The final part of the Phase II procedure was identical to that used for the Choice groups, with respect to arranging the Phase III appointment, mention of debriefing and "limited period" secrecy. Once again, the new appointment was made to emphasize the relative publicity of the No Choice/Public subjects and the anonymity of the No Choice/Anonymous subjects.

Control Subjects (Group M)

Once again, the Control subjects were randomly allocated to group M, by use of their arrival order. For example, after the first twelve Experimental subjects had complied, the thirteenth arrival became the first Control subject.

The Control subjects were greeted in an initially identical manner to the Experimental subjects. That is, they were reassured as regards E's credentials and intention to provide adequate post-experimental debriefing.

However, nothing was said concerning the counterattitudinal task as this was not required of the Control subjects. Instead Control subjects were given a copy of the questionnaire booklet (second edition) with the request:

"I would like you to do these two questionnaires, which are similar to the ones you did last time. They are not timed".

In the identical manner employed with the Experimental subjects, each Control subject was shown to a seat in Experimental Room 1. They were further instructed, as they sat down, to knock on the door (between the two rooms) when they had finished the questionnaire booklet.

When each control subject had finished the booklet, she was again seated in the experimental room 2. E then said:

"I need to see you briefly once more, to determine your reaction to the experiment".

A Phase III appointment was then arranged in the usual manner, by use of the subject's code number. Again, S was reminded of E's eventual post-experimental debriefing, as well as the importance of a "limited period" of secrecy.

It should be noted that E often had to deal with a succession of subjects on a concurrent basis. After the initial interview for example, S1 would commence her first assignment while E would then interview S2. At the busiest times, three subjects would be seated in the lecture room, at different stages of their task.

To ensure no talking or comparison of their task occurred, E always seated subjects on the end of every second row. At no time were subjects seated on the same row. E remained alert for any signs of communication. On the very occasional instances of such transgression, E good-humouredly cautioned the subjects concerned, who always responded appropriately.

In the case of two or more subjects having arrived together for the experiment, E added an extra caution, at the final part of Phase II.

Where concurrent subject experimenting was necessary, careful use of several stop-watches and a pattern of task material was necessary. There were surprisingly few difficulties with a fairly complex operation.

5) Experimental Phase II

This final experimental phase served several important purposes.

i) Provide a measure of the temporal stability of any attitude change.
ii) Check the success of manipulation of choice, as reflected by perceived choice.
iii) Subjective rating of the assignments persuasiveness.
iv) Check adherence to a "limited period" of secrecy.
v) Ensure the validity of the counter-attitudinal nature of the task.
vi) Question subjects as to why they complied with the counterattitudinal request.
vii) Ensure no subject had managed to discover the true purpose of the study.
viii) Ensure an acceptably high level of the experimenter's credibility.
ix) Gauge the general and specific reaction of each subject to the experiment.

The procedure for Phase III, relating to each purpose will be described in turn.

i) Provide a measure of temporal stability of attitude change

As each subject arrived in accordance with their experimental Phase III appointment, they were greeted and handed a questionnaire booklet. The booklet was identical to that used in the previous experimental phases, with the usual exception that the order of the items had been randomized. E addressed each subject thus:

"I would be grateful if you would do these questionnaires, which are very similar to those you have completed recently. Once again, they are not timed".

As E directed S into Experimental Room 2 he said:

"Please knock on the door as soon as you are finished".

In reference to point (i)(above), the question of the stability of attitude change[12] is largely overlooked in research related to the field. Nuttin (1975) is one welcome exception to such neglect. Thus, the third administration of the questionnaire booklet was primarily intended to gauge the absolute stability of attitude change with time, in addition to the relative attitude change between the Experimental and the Control groups.

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[12]This relates only to the Attitude questionnaire

To return to procedural details, when S indicated her completion of the booklet, she was shown into Experimental Room 1, with the comment:

"Would you mind sitting here for a few minutes, as I have a few questions to ask?"

ii) Check the success of manipulation of choice as reflected by perceived choice

E placed a piece of paper in front of S with the following scale transcribed:

Almost complete degree of choice	High degree of choice	Mod.degree of choice	Slight degree of choice	No Choice at all
. . .	. . .	. . .	. . .	.

As S viewed the scale, E asked the first question:

Q1: "Did you feel obliged to undertake the writing of the three assignments when you were last here? How much choice did you feel that you had in the decision to write the assignments, or to refuse to. Please mark the one point that best describes the degree of choice you felt you were given. You will see that there are 13 points, from here (E point to the high end of the scale) to there (E indicates low end of scale). You simply mark one of the points".

At this stage, S marked one of the points, thus rating the perceived choice she felt E allowed. E then read back the label immediately above the point S had

marked, to ensure that she had made no mistake.[13]

As indicated by point ii, the subjects rating of perceived choice was a check on the success of the intended experimental manipulation of choice. Naturally, it was anticipated that the mean perceived choice would be significantly larger for groups A to F (Choice groups) than for groups G to L (No choice groups).

iii) Subjective rating of the assignments Persuasiveness

E placed before S the counterattitudinal assignments she had written and commented:

"I would like you to briefly read your three assignments".

When she had read her assignments, a piece of paper with the following scale was placed before her.

Completely or nearly completely persuasive	Highly Persuasive	Moderately Persuasive	Slightly Persuasive	Not Persuasive at all
. . .	. . .	. . .	. . .	..

E said:

Q2 "Please note how persuasive you feel your first (second, third) assignment was. Once again, there are thirteen points ranging from here (E indicates one end

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[13] This reading back of the rating proved useful. At least one subject had mistakenly rated herself, and altered the rating with the comment: "Oh, I didn't mean that. I've got that round the wrong way".

of the scale) to there (E indicates other end of the scale). Mark the one point that best indicates how persuasive you feel your first (second, third) assignment was."

Again, E read back the three ratings[14], to affirm she had completed same to her own satisfaction.[15] E commented aloud on the three ratings and their relation to each other. For example:

"I see that you consider all three assignments to be moderately persuasive,but that two of these were identically persuasive, while the third assignment was slightly more persuasive".

The example described above would appear as follows:

Completely or nearly completely persuasive	Highly Persuasive	Moderately Persuasive	Slightly Persuasive	Not Persuasive at all
		(1) (3)(2)		
. . .	. . .	. . .	. . .	.

E then requested:

"Do you mind if I tape-record the rest of this interview, as it saves me taking notes. If you do object, I am quite happy to take notes, although it is a little slower".[16]

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[14] By a connection, E knew which rating referred to which essay; (1) (2) and (3) indicated, respectively, the first second and third assignments.

[15] Once again, an occasional subject altered her ratings.

[16] Only one subject voiced any initial objection. A second subject indicated early in the interview, that the tape recorder "put her off"; it was then switched off, and notes taken, verbatim.

If the S replied that she had no objection to the use of the tape recorder, it was plugged in and the microphone placed on her side of the desk. (Otherwise, E simply took notes of S's replies verbatim.) E continued:

"Before I say anything more, could I ask you to answer questions as frankly as possible, as otherwise I will not have accurate information".

E then continued to ask each subject the remaining questions, in identical order and phrasing.

The exact order of the questions is shown by the numerical sequence (hence Q1, Q2, Q3, etc.) Having said as much, the questions will not necessarily be in numerical order, as this allows a more even correspondence with the nine points, initially listed at the start of this section (p.75).

iv) Check adherence to a "limited period" of secrecy.

Q4 "It is crucial that you answer the next question as honestly as possible. Did you manage not to discuss what you were required to do with any other nurses? It does not matter if you have discussed things, but I do need to know".

The repetition of the caution concerning honesty, coupled with the reassurance that E was unlikely to be upset, maximized the likelihood that the question

would be truthfully answered. In addition, E asked the question in a pleasant, friendly and reassuring manner.

If a subject admitted that she had not strictly adhered to the secrecy requirement, E questioned her at some length, and in detail, although still in a friendly manner. Specifically, E asked exactly what had been mentioned. He also invited the particular subject concerned to name the subjects she had spoken to. Subjects were quite agreeable to furnishing names,[17] thus providing a means of counter-checking.

The method used was by no means infallible, but markedly more reliable than the procedure many investigators who asked the relevant question, and made no attempt to follow-up the reply.

v) Ensure the Validity of the Counter-attitudinal nature of the Task

E read out in turn each assignment heading, asking the question:

Q5 "Do you really agree with this statement?"

Barring sufficient attitude change as would change a person from one to its opposite, it was expected that replies to Q6 would be negative. If a subject replied in the affirmative, E carefully checked the rating on all three attitude questionnaires, and closely questioned her.

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[17] Only one subject refused this request.

If sufficient attitude change had occurred, since the completion of the counterattitudinal assignments, to change her attitude to its opposite, validity was upheld. Other reasons lead to the subject being eliminated from analysis (see Results Table 20, p. 146).

vi) Question subjects as to why they complied with the counterattitudinal request

E had confirmed the validity of the task, as outlined in the immediately preceding section. He continued:

Q6 "So you wrote assignments against your personal views. Why do you think you agreed to this task, where you had to write assignments opposite to your own personal views?"

The inclusion of this question is a reaction against the many investigations that merely assume that the reasons for compliance are purely financial

vii) Ensure no subject had managed to discover the true purpose of the study

Q8 "What would you consider was the purpose of this experiment? What do you think I am trying to do?"

E followed up any comments that sounded like partial insights, delving carefully into the details of what the particular subject was saying.

viii) Ensure an acceptably high level of the experimenter's credibility pertained.

To subjects in which relative publicity was maximized (Groups A,B,C,G,H, and I), E addressed the following:

Q7 "When I told you that you would have to defend what you had written to an assistant of mine, did you believe me?"

When S replied, E debriefed her to the extent of telling her that this was not required:

"Well, you will not have to do that. How do you feel about that?"

To subjects in whom anonymity had been stressed (Groups D,E,F, J,K, and L) E said:

"When I told you that what you wrote would be fairly anonymous, did you believe me. Of course, I am able to check and see whose name I have. However, by 'anonymous' I mean that no-one else would see what you had written."

Obviously this question was less straightforward than its immediately preceding counterpart. The realisation that 'anonymity' was only of a relative nature (because of E's access to their names) was reflected in the need for extra clarification with some subjects.

ix) Gauge the general and specific reaction of each subject to the experiment

E asked:

Q3 "How would you feel towards doing another experiment like this one, if ever you were asked?"

Both negative and tentative replies were explored further, to determine exact reasons for any voiced misgivings.

Q9 "If your best friend knew you had written assignments opposite to your own views, what would she think of you?"

E clarified the question where necessary, and questioned subjects more closely to expand or clarify incomplete replies.

Q12 "How much did you hesitate before agreeing to write the assignments".

This question provided E with an insight into how aware, or otherwise each subject was of her decision time.

Q11 "How pleasant did you find the writing of the assignments?"

If a subject indicated any negative reactions in this context, E probed further. In particular, E was

interested to determine whether the subject attributed negative connotations to the counterattitudinal nature of the task, the effect of any writing task, or some other factor. It was not simply assumed that it was the counterattitudinal element that caused negative feelings.

Q13 "If you were asked to defend what you have written in the assignments to some nurses in a couple of months time, how would you feel about that?"

If necessary E posed the additional question:

"Do you think you would be willing to do that?"

Subjects replying in the negative were questioned further to discover their reasons. E finally said:

"I am not going to ask you to do that, I simply wanted your reaction to the question".

Q14 "Is there anything else you would particularly like to say about this study?"

This was the final question of the interview, designed to allow any "untapped" idiosyncratic reactions. E then concluded experimental Phase III as follows:

"As I mentioned last time, I will be coming along to your class in the near future to explain the exact nature of this study and your specific role in it.

However, until that time I would like you to agree to continue not to discuss anything with any other nurses. The reason is that I still have some other nurses to see before I am finished".

E then showed each subject to the door with the comment:

"I am very grateful for the help you have been. Thank you for taking part".

CHAPTER IV

RESULTS

Overview of results and analysis

The results can be summarized under the three headings, Primary, Secondary and Experimental Checks. These headings are partly arbitrary and there is some overlap, but allow some degree of form to the results.

The Primary results are those which relate to the Experimental Hypotheses and the dependent variable, namely attitude change.

Under the counterattitudinal task, the dependent variable was immediately measured (Initial Attitude Change), and again after a delay which averaged five days (Final Attitude Change).

The Secondary results are those not directly related to the experimental Hypotheses or dependent variable. These include:-

i) Compliance and Refusal, with respect to the counterattitudinal task and reasons given for either decision.

ii) Decision time, with respect to Compliance or Refusal.

iii) Assignment analysis, with respect to persuasiveness.

iv) Qualitative data; how subjects reacted to the study.

The Experimental checks determine the success of the intended experimental manipulations, and therefore the validity of the entire experiment. Included in this category are:-

v) The success of the manipulation of Choice.

vi) Adherence to the "limited period" secrecy request.
vii) Validity of the counterattitudinal nature of the task.
viii) Ensure an acceptably high level of E's credibility.
ix) Ensure no subject had managed to discover the true purpose of this study.
x) Ensure homogeneity of subject population.

An examination of the data relating to the experimental checks yielded a number of results that were eliminated from analysis.

The format of result presentation will include a table where necessary, written presentation of a result, as well as a brief discourse of statistical analysis where necessary. Each result will be discussed, although the next section Discussion, will examine the results in the wider context of the whole field of related research, and its significance to the latter.

Primary Results

TABLE 1

The Split Plot Design for analysis of variance of type SPF223.3 (SPF-p.q.) used with Primary results

		Within S Treatments			
		b_1	b_2	b_3	Group
Between S Treatments	acd 111	S 1-6	S 1-6	S 1-6	A
	acd 112	S 7-12	S 7-12	S 7-12	B
	acd 113	S13-18	S13-18	S13-18	C
	acd 121	S19-24	S19-24	S19-24	D
	acd 122	S25-30	S25-30	S25-30	E
	acd 123	S31-36	S31-36	S31-36	F
	acd 211	S37-42	S37-42	S37-42	G
	acd 212	S43-48	S43-48	S43-48	H
	acd 213	S49-54	S49-54	S49-54	I
	acd 221	S55-60	S55-60	S55-60	J
	acd 222	S61-66	S61-66	S61-66	K
	acd 223	S67-72	S67-72	S67-72	L

Both sets of data for Initial and Final attitude change were subject to an identical design, for the purpose

of general analysis. The model used was a Split Plot Factorial design for the Analysis of Variance,[1] which follows the notation SPF-p.q. (P.245-293 Kirk, 1968). The letter "p" refers to the levels of Between block (or subject) treatments, or, in other words, the non-repeated factor(s).Conversely the letter "q" refers to the levels of Within block (or subject) treatments, or, in other words, the repeated factor(s).

In the context of the current study, the specific numerical form of the SPF-p.q. notation, was SPF-223.3. There were two levels of Choice (a_1 and a_2) two levels of Relative Publicity (c_1 and C_2) and three levels of financial Incentive (d_1, d_2 and d_3); these were the non-repeated factors. The final factor was personal Involvement, which was the repeated one, and had three levels (b_1, b_2 and b_3).

Table 1 (above) is the statistical equivalent of Table 2. It can be seen that each of the six subjects per group, complete three levels of the Involvement factor (b_1, b_2 and b_3). The actual group names are provided in the final column of the table.

The Table is a modified version of that given by Kirk (1968, p.294).

Data for Initial and Final attitude change was analysed by computer, on a Biomedical statistical package for the Analysis of Variance, code-named BMD 08V. The data are summarised in Tables 2a and 2b.

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[1] Also known as Repeated measures Analysis of Variance.

TABLES 2a AND 2b

Tables show both Group and Overall attitude change means for subjects writing assignment of Low, Medium and High personal Involvement.

TABLE 2a

INITIAL ATTITUDE CHANGE

CHOICE	RELATIVE PUBLICITY	AMOUNT OF INCENTIVE	GROUP NAME	INITIAL MEAN ATTITUDE CHANGE AT 3 LEVELS OF PERSONAL INVOLVEMENT			
				Low	Med	High	Mean
Choice	Public	Hi	A	0.500	0.500	0.667	0.556
		Med	B	0.333	0.667	0	0.333
		Lo	C	2.167	1.667	1.833	1.889
	Anon.	Hi	D	0.167	1.667	0.667	0.834
		Med	E	1.000	1.167	1.000	1.056
		Lo	F	1.000	0.667	0.167	0.611
No Choice	Public	Hi	G	0.167	1.667	1.167	1.000
		Med	H	1.167	0.500	0.167	0.611
		Lo	I	1.003	0.333	0.333	0.556
	Anon	Hi	J	0.833	1.667	0	0.833
		Med	K	0.667	0.333	0	0.111
		Lo	L	0.833	0.333	0.333	0.500
	Control		M	0.667	1.000	0.167	0.611
Grand Means				(9.820)	(0.917)	(0.528)	0.741

TABLE 2b

FINAL ATTITUDE CHANGE

CHOICE	RELATIVE PUBLICITY	AMOUNT OF INCENTIVE	GROUP NAME	FINAL MEAN ATTITUDE CHANGE AT 3 LEVELS OF PERSONAL INVOLVEMENT			
				Low	Med	High	Mean
Choice	Public	Hi	A	0.667	0	0.500	0.389
		Med	B	0.167	0.500	0	0.111
		Lo	C	1.833	0.667	0.833	1.111
	Anon.	Hi	D	0.500	0.833	1.000	0.778
		Med	E	1.500	0.333	1.167	1.000
		Lo	F	1.667	0.667	0.167	0.834
No Choice	Public	Hi	G	0.167	1.000	0	0.389
		Med	H	1.333	0.167	0.333	0.389
		Lo	I	1.333	0.167	0.333	0.611
	Anon	Hi	J	0.500	2.333	0	0.944
		Med	K	1.000	2.000	1.00	1.333
		Lo	L	0.333	0.338	0.167	0.056
Control			M	1.167	0	0	0.389
Grand Means				0.917	(0.611)	0.403	0.644

Output consisted of a series of tables to demonstrate the effects of "pure" factors (that is, non-interactive ones; Choice, Relative Publicity, Incentive), first order interactions (for example, Choice, Relative Publicity), second order interactions (for example Choice, Relative Publicity, Incentive) and the third order interaction (Interaction of all factors). Various means were also included in the output as well as F ratios and estimates of variance components.

To determine if the experimental hypotheses were upheld, finer analysis was carried out, which included t-tests and examination of a series of graphs (see p. 99).

Hypothesis 1

TABLE 3

Summary table of between and within subject factors (non-interactional)

INITIAL ATTITUDE CHANGE					
Source	SS	DF	MS	F	Signif-icance
Between subjects					
Choice	4.167	1	4.167	1.873	ns
Relative Publicity	1.500	1	1.500	0.674	ns
Incentive	5.148	2	2.574	1.157	ns
Within Subjects					
Involvement	5.009	2	2.505	1.516	ns
FINAL ATTITUDE CHANGE					
Source					
Between subjects					
Choice	0.074	1	0.074	0.031	ns
Publicness	6.000	1	6.000	2.523	ns
Incentive	0.065	2	0.032	0.014	ns
Within Subjects					
Involvement	8.787	2	4.394	3.163	*

Key: ns = not significant
* = significant at 0.05 level of confidence

Only one factor yielded an F value which was of

sufficient magnitude to attain statistical significance ($p < 0.05$). Yet, even this value was only significant for the Final attitude change data.

It is advisable to consult the corresponding Estimates of Variance Components, before making final comments on the impact of significant F values, because there is a linear relationship between the number of subjects and magnitude of F. In other words, the greater the number of subjects per cell, the greater the likelihood that the F value will attain statistical significance.

On the other hand, Estimates of Variance Components $\left(\frac{(\text{deviation})^2}{\text{df}_{\text{component}}}\right)$ are free of such effects attributable to subject numbers.

The significant value for Involvement (Final) accounts for 4.173% of the variance, with a component value of 0.0417.

The non-significant values of both the Initial and Final data account for either negligible or zero variance. Error variance, in both cases, accounts for most of the total variance.

Of the Initial Attitude change F values, the factor Choice followed by Involvement are the closest to attaining statistical significance. Of the Final Attitude change F values, apart from the significant Involvement one, the only other even approaching significance is Relative Publicity.

The cell means of the non-repeated (Between Subjects) factors were as follows. (As a result of the non-significance of the F values, no t-tests were performed, to test if the differences between the means of the levels were significant.

TABLE 4

Cell attitude change means (Initial and Final) for the Between subject factors

	INITIAL			FINAL		
Factors	1	2	3	1	2	3
Choice	0.880	0.602	-	0.667	0.630	-
Relative Publicity	0.824	0.657	-	0.481	0.815	-
Incentive	0.806	0.528	0.889	0.653	0.667	0.625

The cell means for the repeated (Within subjects) factor, Involvement, was as follows:

TABLE 5

Cell attitude change means (Initial and Final) for the Within subject factor (Involvement).

	INITIAL			FINAL		
	Lo	Med	Hi	Lo	Med	Hi
Involvement	0.820	0.875	0.528	0.917	0.611	0.403

As the F value for the Initial attitude change was non-significant, it was assumed that none of the differences between the level means attained statistical significance. However, t-tests (Related measures) were carried out to test for significant differences between the means of the different levels of Involvement, of the Final attitude change values.

However, only the difference between the Low Mean (0.917) and High Mean (0.403), was of sufficient magnitude to attain statistical significance ($t_{11} = 2.761$, $p < .01$), although this was at a very high level (.01 level).

A combination of the Initial and Final Involvement means yields values that are inversely related to attitude change. That is, as the level of Involvement increases, the

amount of attitude change decreases (Lo = 0.869, Med = 0.743 and Hi = 0.466). However, none of these were sufficiently different from the others, to reach statistical significance. Notice that the inverse effect was apparent in the Final attitude change figures, but not the Initial ones.

Discussion

The first hypothesis was upheld in that personal Involvement had an effect of at least equal impact, as the factors Frey and Irle considered so definitive - Choice Relative Publicity and financial Incentive. Involvement had a greater effect as the only statistically significant results were associated with this factor. However, as most Involvement results did not reach statistical significance, one hestitates to draw conclusions other than the one relating to the confirmation of the first hypothesis.

Both the Combined (Initial and Final averaged) and Final Involvement means were inversely related to attitude change. However, only one mean difference attained statistical significance, so caution must be shown in making any conclusions.

Intuitively, it would appear that a person would be more likely to exhibit attitude change in issues he was not too concerned about, than others he might fight for.

However, the inverse pattern associated with Involvement, was stronger than any distinct pattern associated with amount of Incentive, and attitude change.

Hypothesis 2 (i, ii, iii).

The Interactions of the factors do not directly relate to Hypothesis 2. However, the second order interaction of Choice . Relative Publicity. Incentive (C.RP.Inc) does bear on Frey and Irle's predictions. Specifically, the first step in the upholding of their predictions with respect to conditions favouring either an Incentive or a Dissonant effect, would be a statistically significant C.RP.Inc interaction. The following two tables present F ratios of this particular interaction, in addition to the others which are of less interest.

TABLE 6

Summary table of Between and Within subject factor Interactions.First, Second and Third order interactions are shown for both Initial and Final attitude change values.

INITIAL ATTITUDE CHANGE

Source	SS	DF	MS	F	Significance
Between Subjects					
Choice.Relative Publicity	0.296	1	0.296	0.133	ns
Choice Incentive	8.111	2	4.056	1.824	ns
Relative Publicity. Incentive	6.778	2	3.389	1.524	ns
Ch.RP.Inc.	14.037	2	3.156	3.156	*
Within Subjects					
Choice Involvement	1.028	2	0.514	0.311	ns
Relative Publicity Inv'lment	0.861	2	0.431	0.261	ns
Incentive Involvement	14.991	4	3.748	2.269	ns
Ch.RP. Inv.	1.398	2	0.699	0.423	ns
Ch.Inc.Inv.	4.028	4	1.007	0.611	ns
RP.Inc.Inv.	4.694	4	1.174	0.711	ns
Ch.RP.Inc.Inv.	3.761	4	0.942	0.570	ns

FINAL ATTITUDE CHANGE

Source	SS	DF	MS	F	Significance
Between Subjects					
Choice.Relative Publicity	0,296	1	0.296	0.125	ns
Choice Incentive	10.954.	2	5.477	2.303	ns
Relative Publicity. Incentive	17.194	2	8.597	3.616	*
Ch. RP. Inc.	0.676	2	0.338	0.142	ns

TABLE 6 (Cont'd).

Within subjects	SS	DF	MS	F	Significance
Choice Involvement	8.676	2	4.338	3.123	*
Relative Publicity Inv'lment	4,361	2	2.181	1.570	ns
Incentive Involvement	16.407	4	4.120	2.953	*
Ch.RP.Inv.	2.065	2	1.032	0.743	ns
Ch.Inc.Inv.	9.963	4	2.491	1.793	ns
RP.Inc.Inv.	1.278	4	0.319	0.230	ns
Ch.RP.Inc.Inv.	5.130	4	1.282	0.923	ns

Key: ns = not significant
* = significant at 0.05 level of confidence.

The C.RP.Inc. interaction was statistically significant for the Initial but not for the Final attitude change values. Only one of the first order interactions involving combinations of these three factors, is statistically significant; Relative Publicity Incentive is significant at the 0.05 level, but only for the Final attitude change values.

Two of the first order interactions involving Involvement are statistically significant but only for the Final attitude change values.

Discussion

Most of these interactions are of minimal interest to the study.

However, the C.RP.Inc interaction has bearing on Frey and Irle's predictions and the fact that only one value proved significant offers little support for Frey and Irle, as well as for Incentive and Dissonance theories in general.

In a sense, there was no need to graph the Final attitude change values (see page 99 and the following pages). However,it was nevertheless considered worthwhile to see if the predicted direction (Inverse or Direct) occurred in

accordance with the conditions Frey and Irle considered optimum for a Dissonant or Incentive effect to occur.

There may be some importance in the fact the interactions that were significant, featured the factor Involvement just as frequently as the other three factors Frey and Irle considered so crucial. If so, Hypothesis 1 is more closely implicated.

Consideration of this hypothesis required an examination firstly of the means of groups A, B and C (Choice/Public groups), secondly of J, K and L (No Choice/Anonymous groups) and thirdly, groups DEF and GHI (Choice/Anonymous and No Choice/Public respectively). Figs. 4, 5, 6, and 7 respectively, contain the results for these four groupings of results.

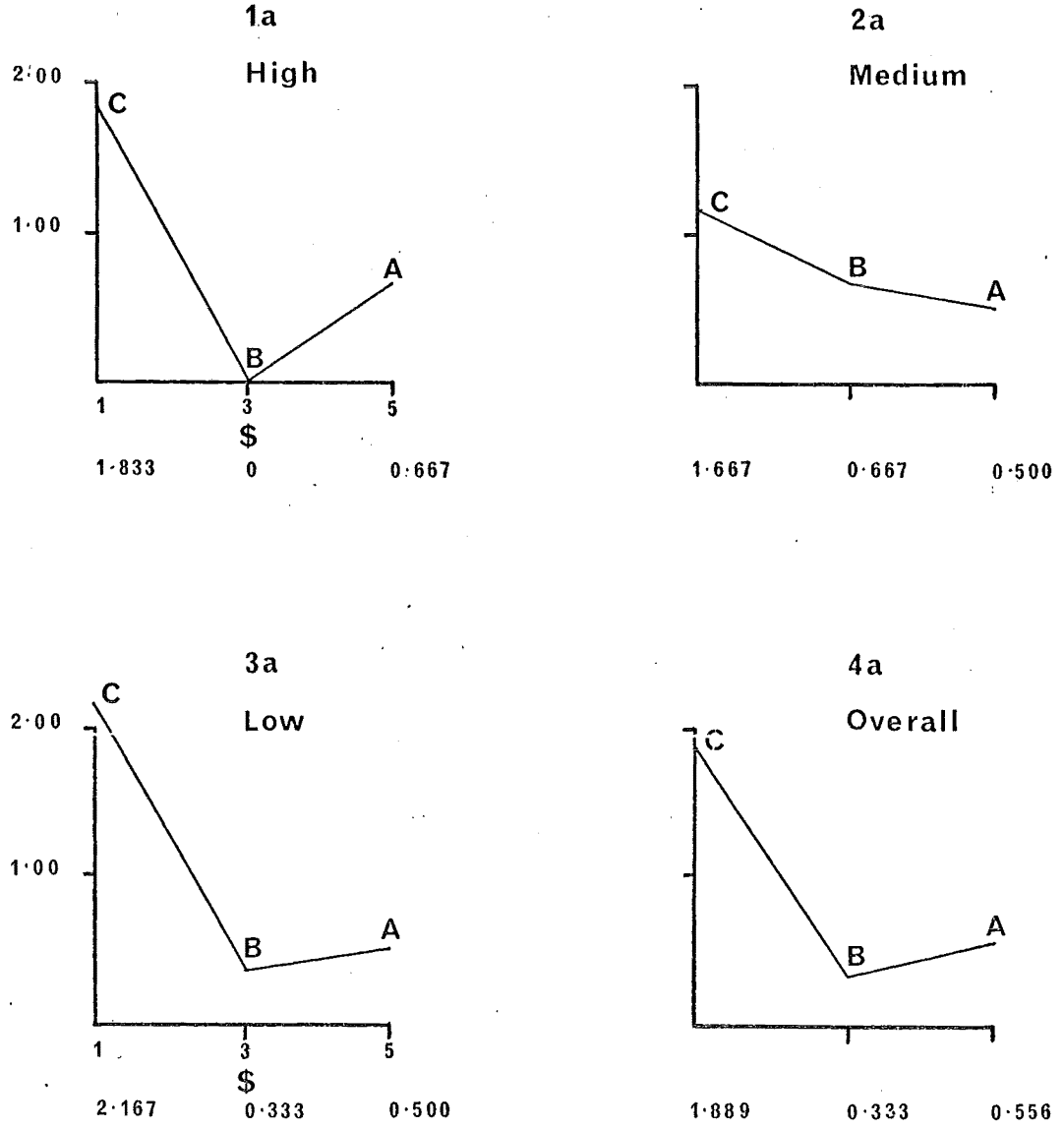
Note the graphs 1a to 4a show the Initial attitude change values while the graphs 1b to 4b show the concomitant Final attitude change values. Three graphs show the values of High, Medium and Low involvement respectively for Initial and Final attitude change values. (1a to 3a and 1b to 3b). The graphs represent an average of the other six; thus level of Involvement has been excluded from consideration here 4a and 4b). Each point in the graph represents its relevant group and is so labelled.

In Fig. 4 the Choice/Public groups are presented for which Frey and Irle predicted the Dissonant inverse relationship between increasing amounts of financial incentive and attitude change.

In all graphs, with the one exception of 2a, the same pattern occurs, namely an "uneven V", with the $1.00 value showing the most attitude change, $5.00 value second, and the $3.00 value exhibiting least change.

FIGURE 4

Graphed means of Initial attitude change for groups A,B and C (Choice/Public) where Frey and Irle predicted an Inverse Relation between financial incentive and attitude change



Key: Abscissa refers to amount of Financial Incentive. Ordinate refers to amount of attitude change.

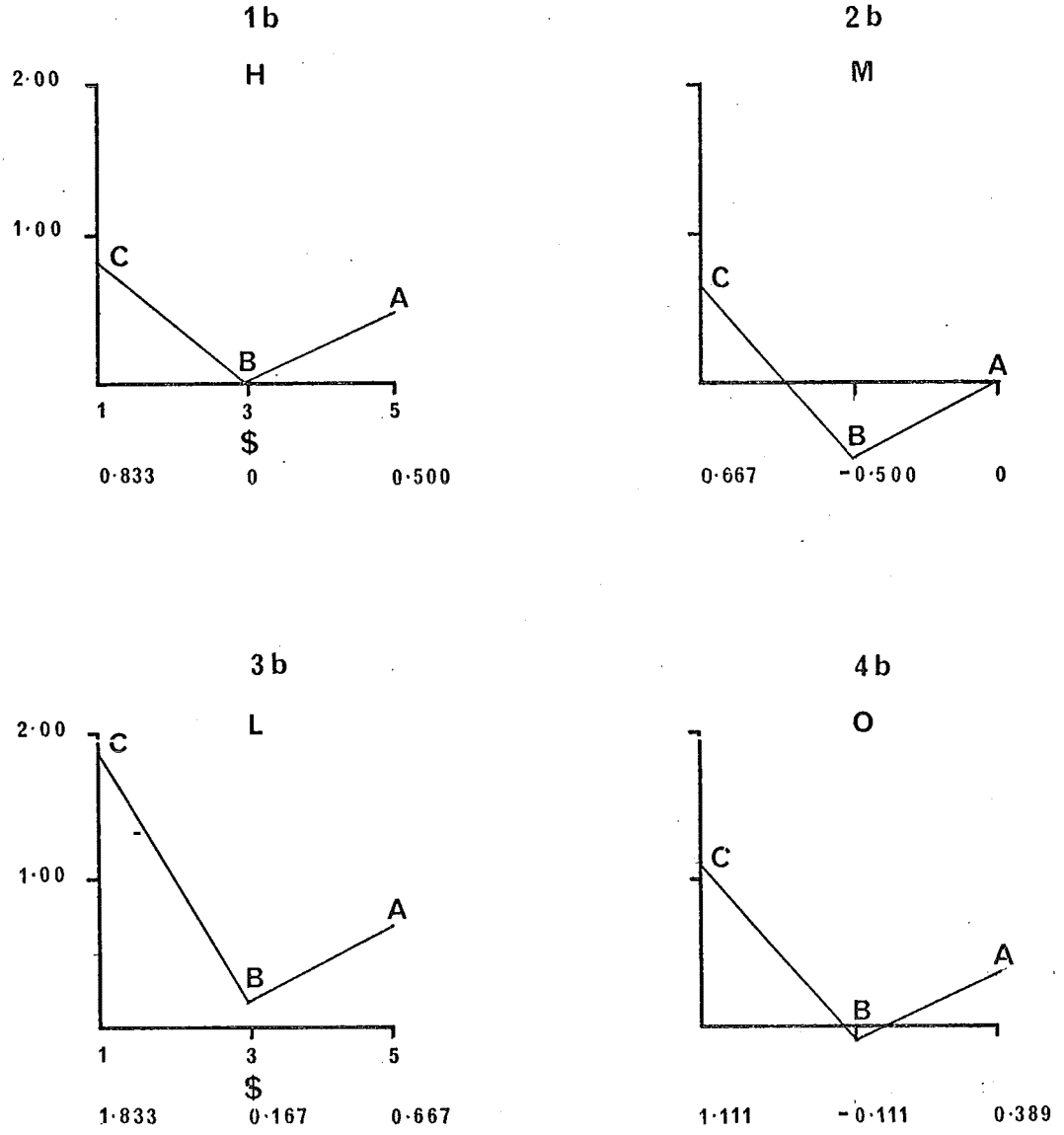
Minus values depict strengthening of S's original attitude.

(This key holds for Figs. 4 to 7)

H = High degree of personal involvement
M = Medium degree of personal involvement
L = Low degree of personal involvement
O = Overall (Average of H M and L)

FIGURE 4 (CONT.)

Graphed means of Final attitude change for groups A, B and C (Choice/Public) where Frey and Irle predicted an Inverse Relation between financial incentive and attitude change



The exceptional pattern (2a), was the only graph illustrating a pattern at all similar to that predicted by Frey and Irle. Thus, regardless of whether level of Involvement is taken into account (1a and b, 2 a and b, 3a and b) or not (4a and b), the predicted inverse pattern did not occur.

If the middle financial value ($3.00) is excluded from consideration, and a straight line drawn between the remaining two points, the predicted inverse pattern occurs in all graphs.

Regardless of whether such a modification is justified, more difficulties arise for Frey and Irle's predictions. Dissonance theory claims that counter-attitudinal behaviour, with respect to an issue of high personal involvement yields more dissonance and consequent attitude change than an issue of relatively less involvement. Therefore, the most attitude change should occur when the issue is of highest personal involvement (1a and 1b) for the subject with medium involvement (2a and b) and low involvement (3a and b), second and third, respectively.

If the amount of attitude change at each level of involvement is calculated, the following table results. (These correspond to graphs 1a, 2a, 3a, 1b, 2b and 3b respectively).

TABLE 7

Amount of attitude change at each level of involvement						
	Hi	Med	Lo	Dissonance Theory Predictions (ranked)		
Initial	0.89	0.95	0.94	1	2	3
Final	0.443	0.057	0.890	1	2	3

From Table 7 it is obvious that not one result was in the correct order in accordance with Dissonance theory.

Other difficulties arise for Frey and Irle's Dissonance theory predictions. In reference to the graphs of Fig.4, some instances of either zero attitude change (1a and 1b) or a "boomerang" effect (1b and 2b) are apparent. With the "boomerang" effect, the subject adheres even more closely to his pre-dissonance attitude. Dissonance theory predicts under the theoretically conducive conditions, counterattitudinal dissonance and consequent attitude change. The theory in no way accounts for"boomerang"effects or zero attitude change.

Finally, if t-tests of statistical significance are performed on the Overall group means (4a and 4b) in (Figure 4), only two differences are of sufficient magnitude to be significant. This is apparent from the following Table.

TABLE 8

Statistical significance of differences between the Overall group means; corresponds to Fig. 4 (graphs 4a and 4b).

	GROUPS		
	C	B	A
C	-	****	****
B	(NS)	-	NS
A	(NS)	(NS)	-

Key: * = sig. at .05 level of confidence
** = sig. at .025 level of confidence
*** = sig. at .01 level of confidence
**** = sig. at .005 level of confidence
NS = Not sig. at .05 level of confidence
n.b. Encircled values represent Final attitude change.

Discussion

Even if the extra factor of Involvement is excluded, the results do not support Frey and Irle's contention, that such Dissonance conducive conditions (Choice/Public) will yield an inverse relationship between increasing amounts of incentive and attitude change. If Involvement is taken

into consideration, the situation does not improve.

Part of the difficulties with respect to the prediction of the inverse relation, were caused by the attitude changes for the Medium financial incentive subjects (group B). Deletion of such a group, in an attempt to obtain the inverse effect, is not justified. However, even if such a modification is effected, the situation is not really improved, as a consideration of Involvement-related predictions illustrated.

Finally, only a minority of the results (ignoring Involvement) attained significance, which is the final blow, to Frey and Irle's predictions.

With reference to Fig. 5, the Initial attitude change means form the "uneven V" pattern that occurred with the "Dissonant" groups(Fig.4). However, unlike the Dissonant values the low incentive ($1.00) does not produce the high point (or most attitude change). In fact, the Initial attitude change values fluctuate so that the middle and high incentive ones alternately account for the most attitude change.

However, the Final attitude change means form a different pattern, that of an uneven "inverted V". The change in pattern can be attributed to the paradoxical increase in attitude change for the Medium incentive value $3.00), from the Initial to the Final measurement.

Regardless of whether level of Involvement is taken into account or not, Frey and Irle's prediction of an Incentive effect is not upheld.

As with the "Dissonance" groups (Fig.4), the middle Incentive value causes the most difficulties for the prediction. If this point is deleted, the situation is even

FIGURE 5

Graphed means of Initial attitude change for Groups L, K and J (No Choice/Anonymous) where Frey and Irle predicted a direct relation between financial incentive and attitude change

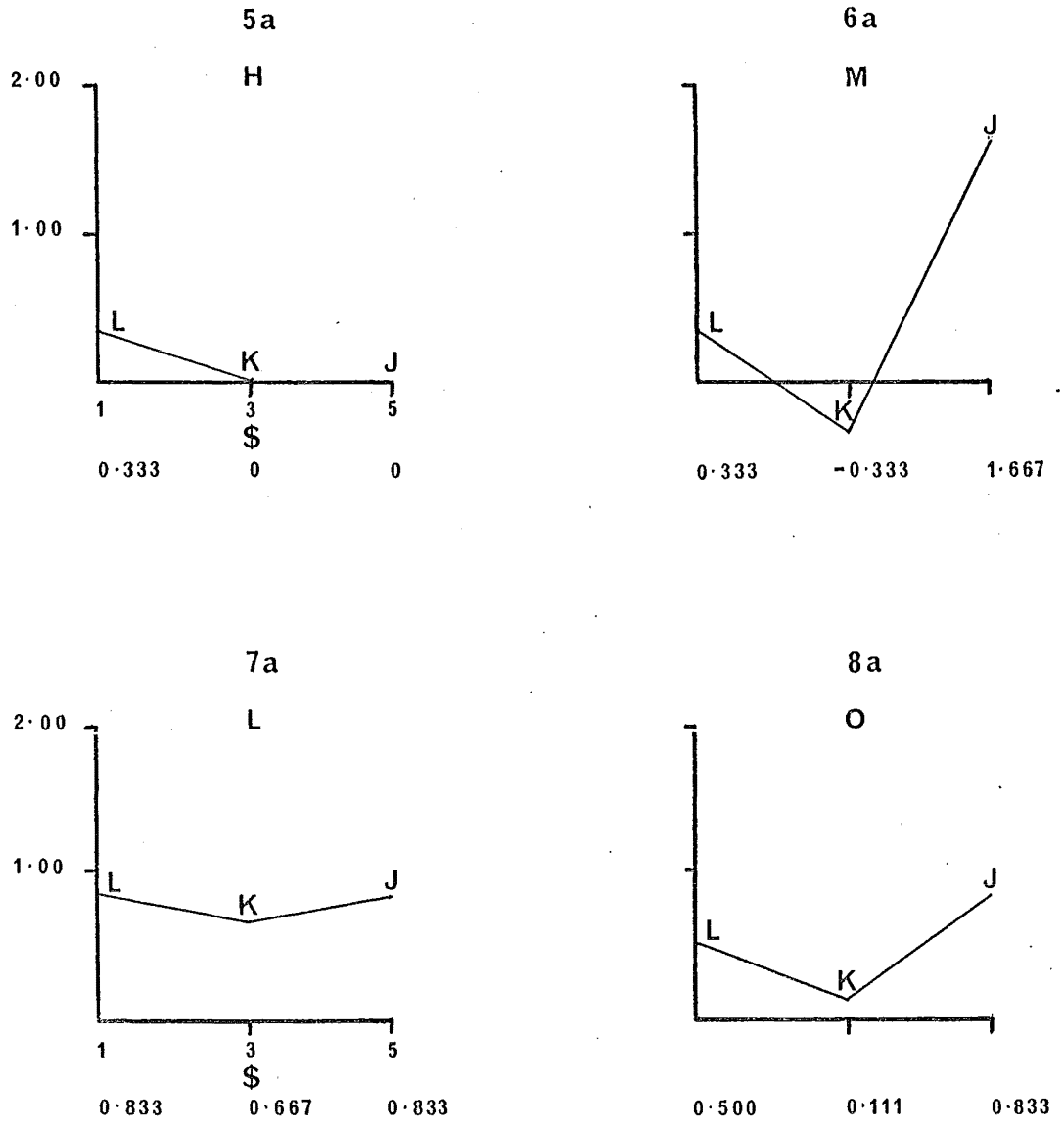
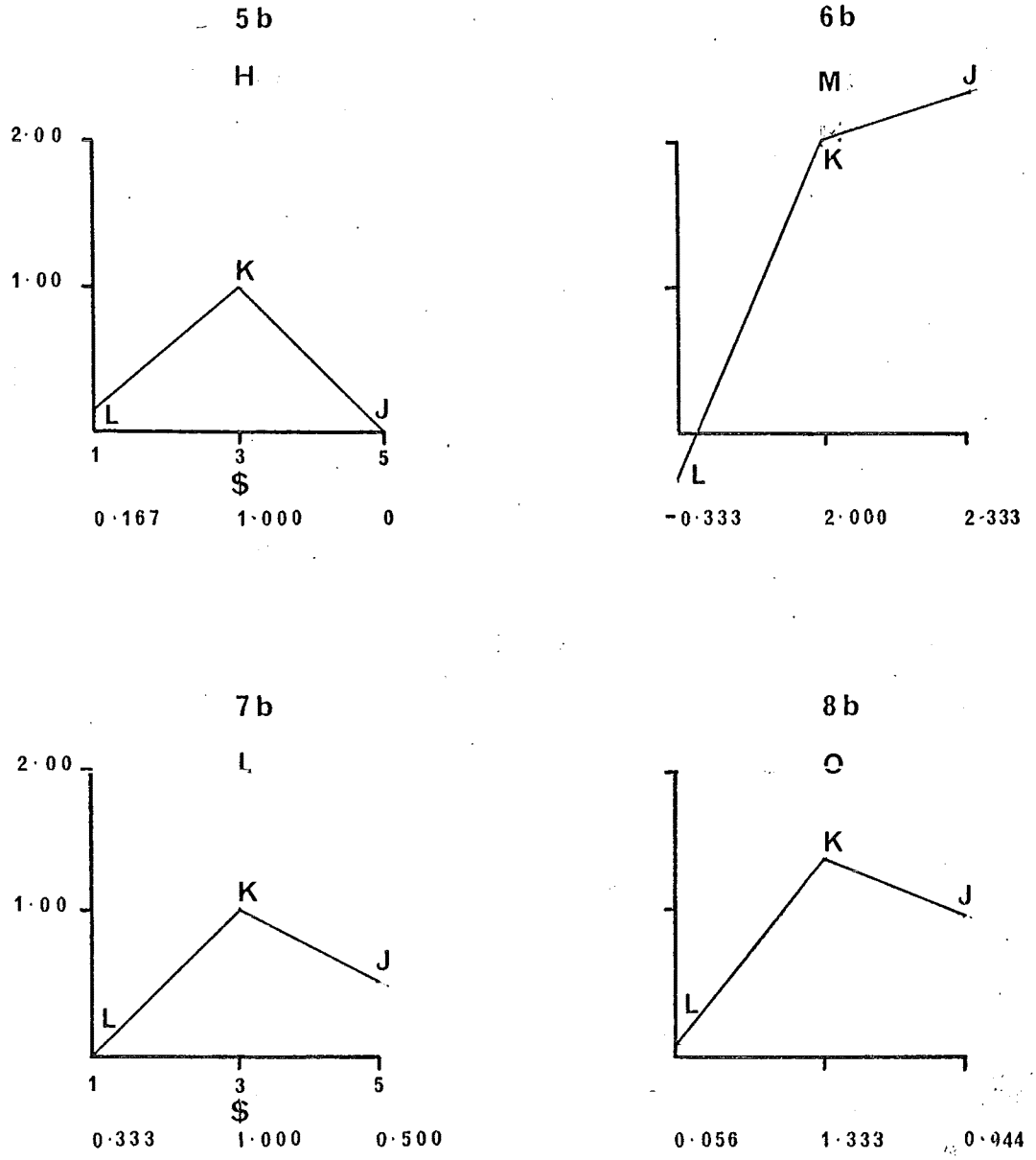


FIGURE 5 (CONT.)

Graphed means of Final attitude change for groups L, K and J (No Choice/Anonymous) where Frey and Irle predicted a direct relation between financial incentive and attitude change



less improved, than if the same modification is applied to the "Dissonance" groups. The overall means (8a and 8b) do, with the modification, yield the direct relationship between increasing amounts of Incentive and attitude change. However, the predictions are not completely fulfilled if the level of Involvement is taken into consideration with the modification. The predicted direct linear relationship occurs in only one Initial attitude change graph, at the Medium level of Involvement (6a), and one Final Attitude change graph, specifically at the Low level of Involvement (7b). The incorrectly predicted patterns include two inverse Incentive-attitude change relationships (5a and 5b), and one horizontal plot (7a). Graph 6b was directly related, but was adjudged incorrect because the lowest Incentive value had "boomeranged" (See page 102).

As with the Dissonance groups (Fig.4) both zero attitude change and "boomerang" effects undermine further Frey and Irle's contention. In graph 5a (High Involvement) two of the points are zero, while in graph 5b one point is zero. Two examples of a "boomerang" effect occur, one in graph 6a, and as mentioned above, one in graph 6b; both occur at the Medium level of Involvement.

It was noted earlier in this passage, that the Overall values (8a and 8b) did form the direct relationship predicted by Frey and Irle. However, setting aside for a moment the difficulties that arise if the factor Involvment was to be considered, none of the group means are significantly different from each other. This is demonstrated below in Table 9, where the 0.05 level of confidence is used as a basis for determining statistical

significance. The t-test (Unrelated measures) was employed here.

TABLE 9

Significance chart of mean group differences for the Incentive groups (L, K & J)

	GROUPS		
	L	K	J
L	-	NS	NS
K	(NS)	-	NS
J	(NS)	(NS)	-

Key: NS = Not significant at the 0.05 level of confidence.
Encircled values represent Final Attitude change group means.

Discussion

As with the "Dissonance" groups (Fig.4) once again, the results fail to adequately fulfil Frey and Irle's predictions of a direct and positive relationship between increasing amounts of Incentive and the dependent variable, attitude change. Comparitively, the Dissonance predictions while still inadequately fulfilled, were closer than with the Incentive groups, if the middle Incentive value was deleted.

Deletion of the middle Incentive value is, of course, an unjustified modification but even this only barely improves the situation. The remaining Overall values, with such a modification, allow the correct plot, but consideration of the particular level of Involvement yielded more incorrect than correct predictions. The "boomerang" effects and zero attitude change,in the instances where they appear, create further difficulties. None of the Overall group means were statistically significant anyway.

Thus far, Frey and Irle appear to have considered

too few factors in reaching their predictive conclusions, in view of the effect of including Involvement as a factor as well as including more than two levels of Incentive.

Although speculative, it would seem possible that the addition of any further factors to increase the complexity of the situation, would cause even more problems for Frey and Irle's differential predictions.

Hypothesis 2 (iii): Figures 6 (overleaf) and 7 deal with the Choice/Anonymous and No Choice/Public manipulations, where Frey and Irle predict no significant relationship between increasing amounts of Incentive and attitude change.

TABLE 10

Chart of statistical significance between the Overall (12a and b) group means, which corresponds to Fig. 4

	Groups		
	F	E	D
F	-	NS	NS
E	(NS)	-	NS
D	(NS)	(NS)	-

Key: NS = Not significant at the 0.05 level of confidence.
Bracketed values represent final attitude change.

TABLE 11

Chart of statistical significance between the Overall group means (graph 16a and 16b), which correspond to Fig. 7

	Groups		
	I	H	G
I	-	NS	NS
H	(NS)	-	NS
G	(NS)	(NS)	-

Key: NS = Not significant at the 0.05 level of confidence.
Bracketed values represent Final Attitude change.

Both Tables 10 and 11 demonstrate that there were no differences of statistical significance, between the Overall group means, which is in accordance with Frey and

FIGURE 6

Graphed means of Initial attitude change for groups F, E and D (Choice/Anonymous) where Frey and Irle predicted no significant differences

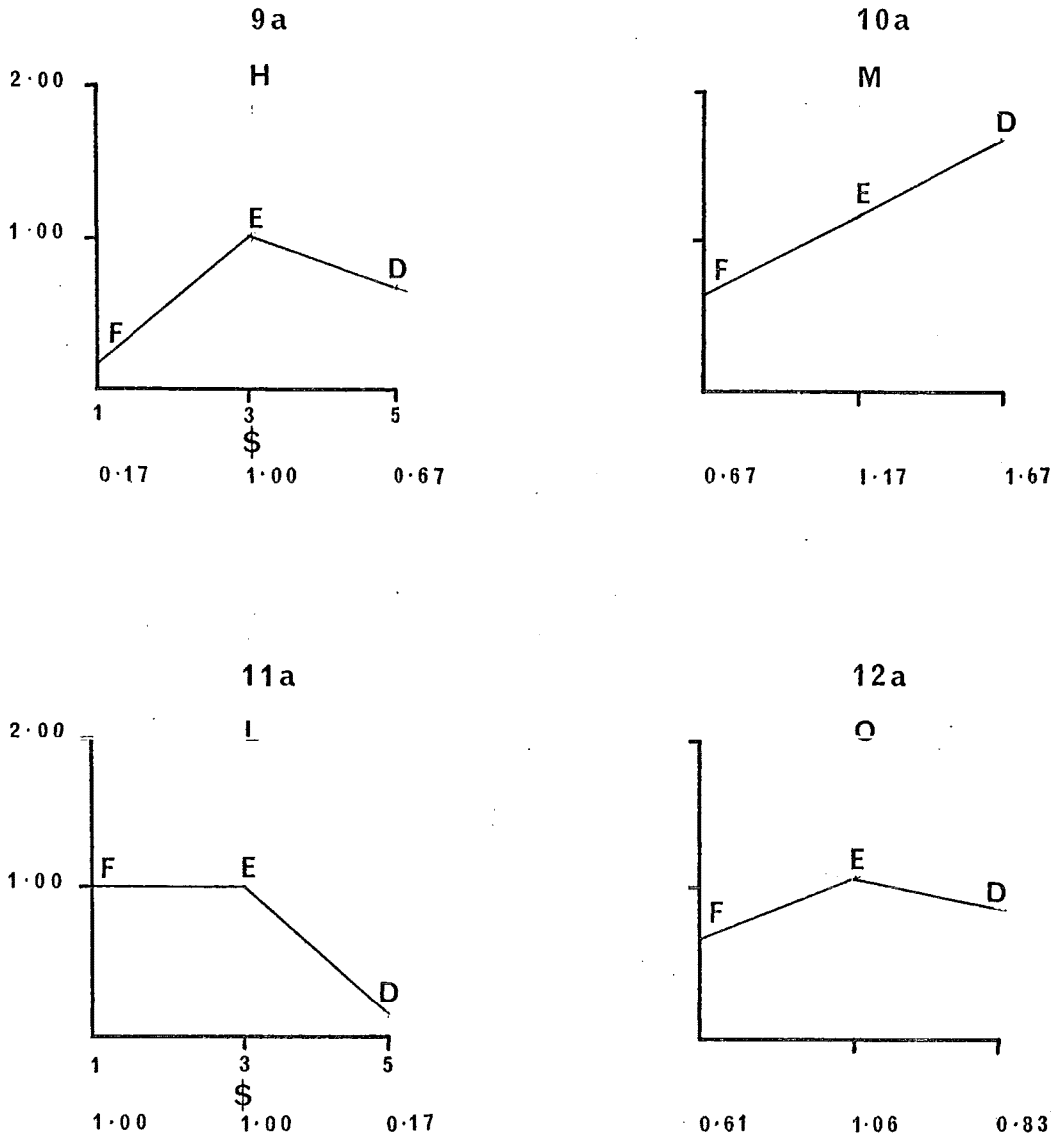


FIGURE 6 (CONT.)

Graphed means of Final attitude change for groups F,E and D (Choice/Anonymous) where Frey and Irle predicted no significant differences

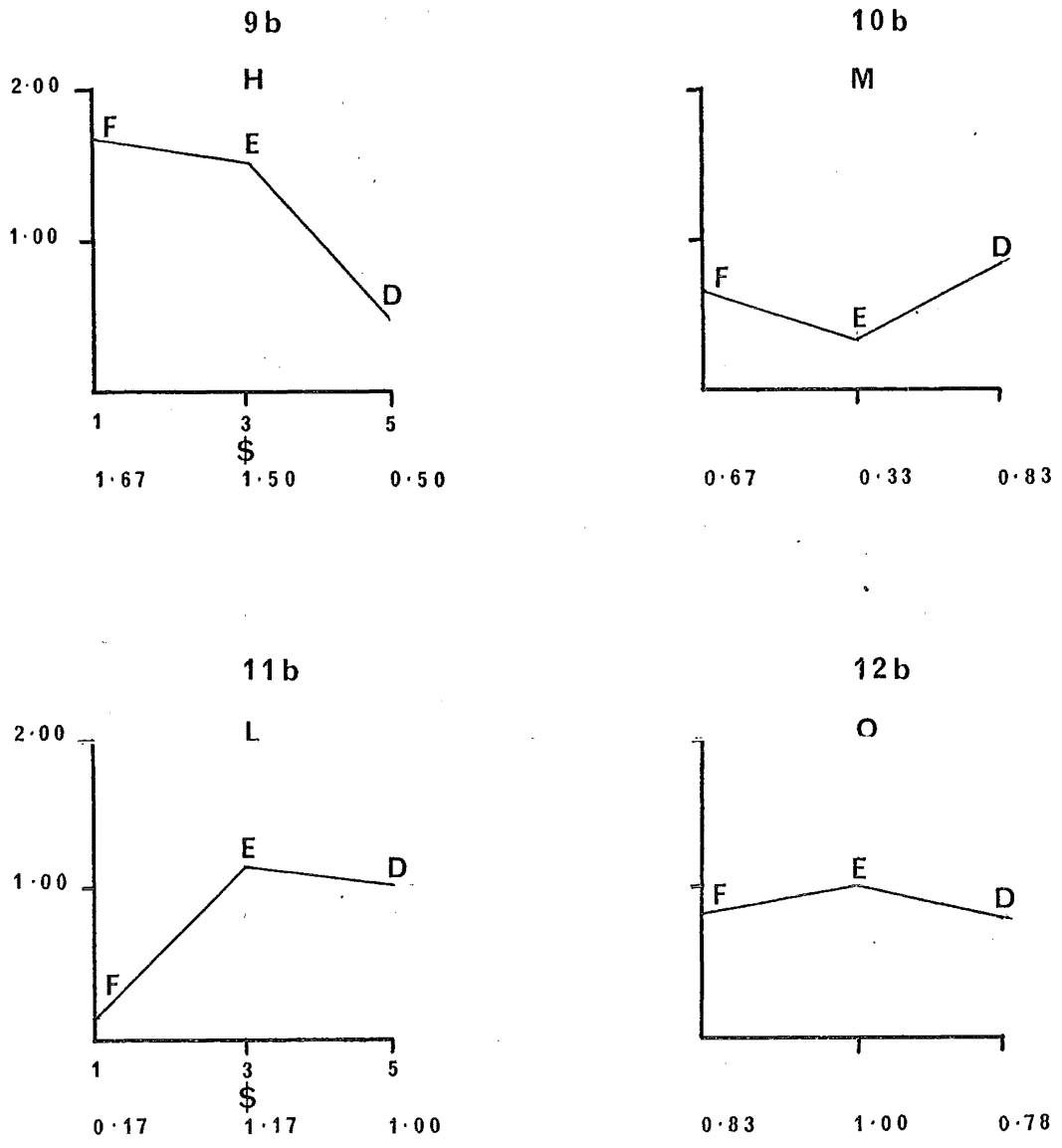


FIGURE 7

Graphed means of Initial attitude change for groups I, H and G (No choice/Public) where Frey and Irle predicted no significant differences

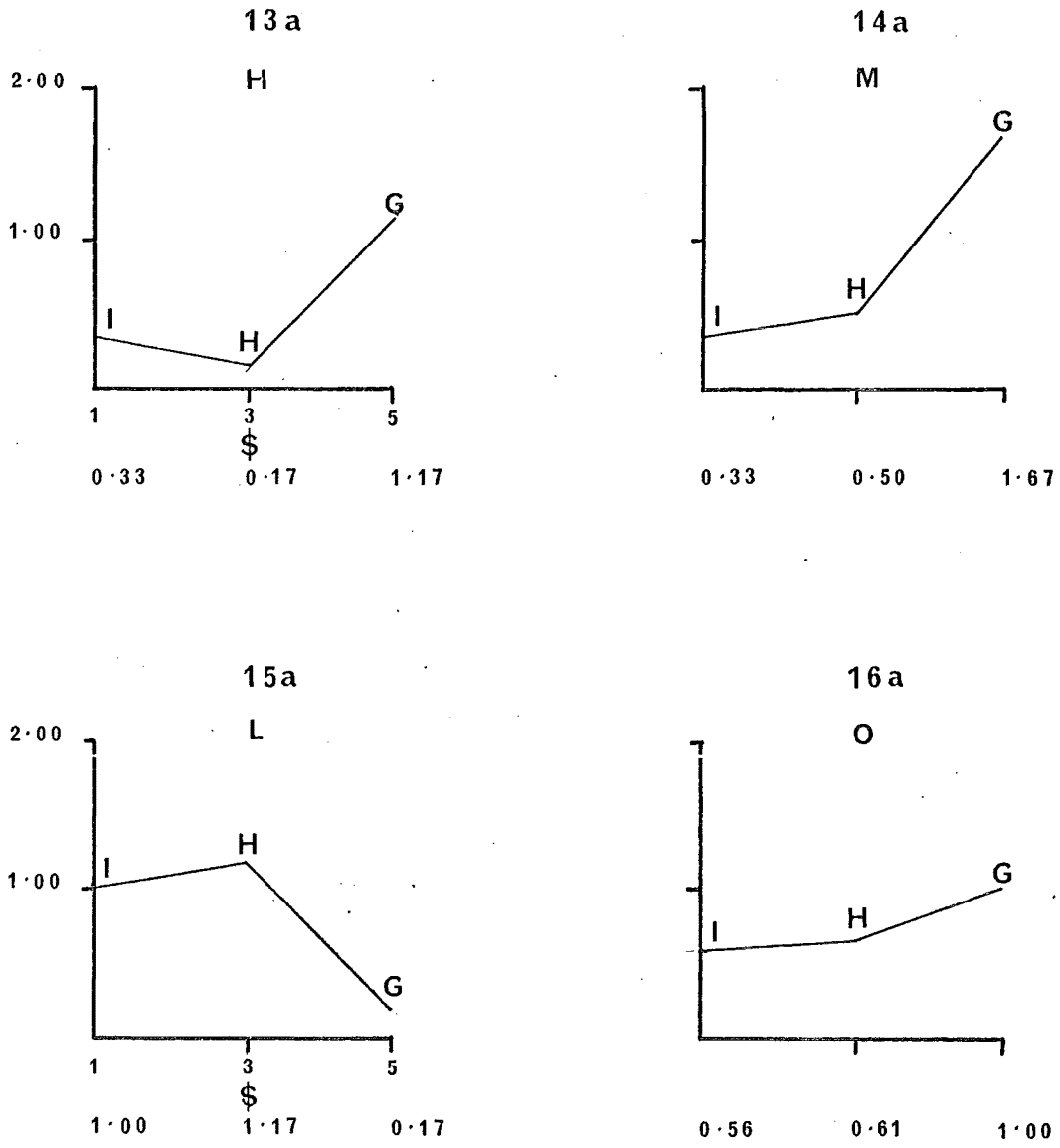
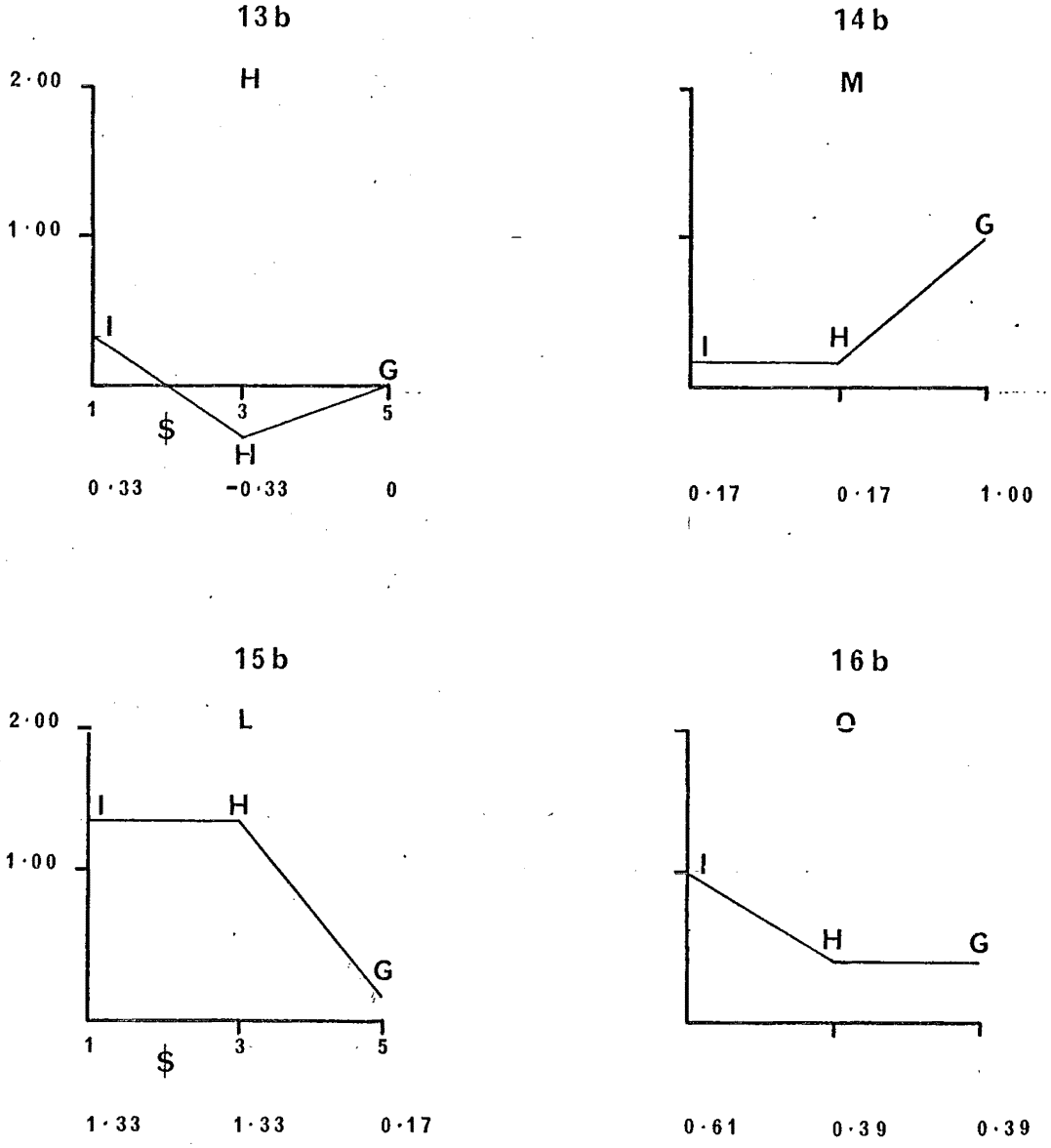


FIGURE 7 (CONT.)

Graphed means of Final attitude change for groups I,H and G (No Choice/Public) where Frey and Irle predicted no significant differences



Irle's predictions.

The non-significant results yield as much fluctuation as the Dissonance and Incentive groups including a direct positive relationship (10a in Fig.6), and if the Middle Incentive values are deleted, both direct and negative effects occur. Again, a "boomerang" effect (13b in Fig.7) and zero attitude change (13b) occur.

Discussion

In the light of the poor predictive success with both the "Dissonance" and "Incentive" groups (Figs. 4 and 5, respectively), the fulfilment of Frey and Irle's hypotheses here, has no significance. In addition, the same type of fluctuations occur as in the "Dissonance" and "Incentive" groups, including both zero attitude change, and boomerang effects.

To conclude discussion on Hypothesis 2, Frey and Irle's differential predictions were not upheld by the results whether or not the level of Involvement was taken into account. The Dissonance groups did not exhibit the Inverse relationship between increasing amounts of Incentive and attitude change. (Fig 4.) The "Incentive" groups did not exhibit the predicted Direct relationship between increasing amounts of incentive and attitude change (Fig.5) The confirmation of the predicted results in the Choice/Anonymous (Fig.6) and No choice/Public groups (Fig.7) is rendered meaningless by the failure of the crucial two predictions concerning the Dissonant or Incentive effect. The deletion of the middle Incentive value tended to improve the results, with respect to Frey and Irle's predictions, if level of Involvement was not considered. Hypothesis 2 was

therefore not confirmed.

Temporal Stability of attitude change

As mentioned in page 32 (Procedure), the study provided for a third administration of the Attitude questionnaire during Phase III, to check the stability of any attitude change which may have occurred as a consequence of the counterattitudinal task in Phase II. The Initial attitude change and the Final attitude change means were presented in Tables 2a and 2b respectively (see pages 90 and 91).

Generally, there is a decrement from the Initial to the Final measurement of the dependent variable, although of insufficient magnitude to attain statistical significance (0.05 level).

The Grand mean for Initial attitude change is 0.741 while the corresponding value for Final attitude change is 0.644. The difference (0.099) is not statistically significant if a t-test (Related measures) is used ($p > 0.05$).

This difference is reflected in the pattern of relationships between Initial and Final Experimental Group means. Specifically, the majority (n=8), show a decrement from the Initial to the Final measurement. However, once again, none of these differences are of sufficient magnitude to reach statistical significance ($p \geq 0.05$). The differences range from 0.778 (Group C) to 0.056 (Groups D and E).

Four groups demonstrated incremental differences between the Initial and Final measurements of the dependent variable. The differences of these groups, namely F, I.,J. and K, ranged from 1.22 (K) to 0.055 (I), but none of these were statistically significant.

The Control group (M) also showed a decremental difference between the Initial and Final measurements (0.222) which is greater than that of the Grand means (0.097).

Finally, if the Overall means, corresponding to the level of Involvement are examined, two support the general decremental trend (Medium and Low) while the third demonstrates an incremental difference. The respective differences for the Low, Medium and High Overall means were +0.097, -0.306 and -0.125. No differences were statistically significant ($p > 0.05$).

Discussion

Although the trend for the Initial to Final measurement of the dependent variable was decremental, none of these differences were of sufficient magnitude to be of statistical significance. In addition, the Control group exhibited the same trend, which was of slightly greater magnitude than the grand mean differences of the experimental groups. Finally, examination of both group means and overall involvement means yields some decremental differences, which are contradictory to the general trend.

For the three reasons thus outlined, little importance can be placed on the general trend relating to temporal stability. One can then agree with the need to pay attention to temporal stability, as did Nuttin (1975).

When considering the experimental hypotheses, the need to measure attitude change twice is demonstrated as the factors had differential effects across each measurement. It should be recalled that the statistically significant results were almost entirely obtained with the final attitude change data.

Therefore, consideration of temporal stability of the dependent variable does have merit, despite the reservation concerning results in this study.

RESULTS

SECONDARY RESULTS

Compliance with the Counterattitudinal Task and Refusal

This study revealed a high level of compliance. Overall, 93 per cent of the trainee nurses who had attended experimental Phase II, agreed to perform the counterattitudinal task. The exact experimental location of the total refusals (n=7), is clearly shown in Table 12 (p.120).

More refusals occurred in the choice groups (A B C D E and F) than the no choice groups (G H I J K and L), the numbers being, respectively, 5 (10.20%) and 2(4.55%). However, the differences did not reach statistical significance.

The first experimental group (A) accounted for a majority of the total refusals (42.86%), although it must be noted that these included the first three subjects of the total.[1]

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[1]Other slight patterns were apparent, but were not statistically significant, and probably accounted for by the first three subjects' decisions to refuse. One such pattern was the direct relation with amount of financial incentive; the High, Medium and Low incentive subjects accounted for 4, 2 and 1 refusal(s) respectively.

Discussion

Much of the research relating to attitude change does not report the rates of compliance, which raises the possibility of total cooperation. However, a very high rate usually upwards of 90 per cent, is reported by those studies that do comment on this aspect. The high rate of compliance in this study compares favourably with that of others. Cooper et al (1972), reported a rate of 95 per cent.

The predominance of refusals in the choice groups may reflect relatively less coercion, than that experienced in the no choice groups.

However, the differences did not reach statistical significance as noted. The first three subjects who refused, may have felt ill at ease with E, which may have influenced their decision. The fact that E initially felt nervous may have been a contributing factor in the decision of these initial subjects.

Reasons for Compliance

The reasons for compliance with the counter-attitudinal task were requested during the final experimental phase - Phase III. Subjects were free to offer more than one reason, if they so desired, and these are presented in Table 13 (p. 120).

Actually, only a minority of the experimental subjects offered more than one reason for their compliance (n=30 or 41.67 per cent). The number of reasons given ranged from one to three. All subjects, except one were able to offer at least one reason.

The reason "for the money" featured infrequently, being ranked ninth and accounting for only 2.91 per cent of the total. The reason accounting for most compliance was a feeling of commitment to the experiment, which represented 23.30 per cent of total responses.

There was a distinction of perceived coercion, which yielded either the third or the fourth categories. Combined, these categories accounted for 21.36 per cent of all responses. The subjects who felt "requested" tended to be members of the No choice groups, as were those who felt they were "told" to do the counter-attitudinal task. The No choice groups accounted for a total of 17 (77.27 per cent) of all these combined categories (22).

Many subjects stated that they complied because they saw the task as a debating challenge. Hence the "challenge of a 'debate'" was ranked second in the list of reasons, which represented 18.45 per cent

TABLE 12

Compliance with, and Refusal of, the Counterattitudinal Task

Choice	Relative Publicity	Amount of Incentive	Group Name	Compliances	Percent	Refusals	Percent
		$					
		5	A	8	72.73	3	27.27
	Public	3	B	8	88.89	1	11.11
Choice		1	C	7	100	0	0
		5	D	6	85.71	1	14.29
	Anon.	3	E	7	100	0	0
		1	F	8	100	0	0
		5	G	8	100	0	0
No Choice	Public	3	H	6	100	0	0
		1	I	7	87.50	1	12.50
		5	J	7	100	0	0
	Anon	3	K	7	87.50	1	12.50
		1	L	7	100	0	0
CONTROL		1	M	7	100	0	0
			TOTAL	93	93	7	7

TABLE 13

Reasons Given in Order of Frequency for Compliance
With the Counterattitudinal Task
Expressed as Integers and Percentages of Total

	Reasons for Compliance	Groups A	B	C	D	E	F	G	H	I	J	K	L	Total	%
1.	Part of an expt. they had volunteered for.	0	3	0	4	3	1	3	0	2	2	4	2	24	23.30
2.	Challenge of a 'debate'.	1	4	3	2	0	3	0	4	1	0	0	1	19	18.45
3.	Were requested to.	1	0	0	0	1	1	2	0	2	3	2	0	12	11.65
4.	Were 'told' to (some coercion implied).	0	1	0	0	1	0	3	0	0	1	2	2	10	9.71
4.	Altruistic reasons.	3	0	2	0	0	0	0	1	0	2	1	1	10	9.71
6.	Importance of seeing both sides.	1	1	0	0	1	1	1	1	0	0	0	0	6	5.83
7.	Interesting or enjoyable.	0	0	1	1	0	0	1	0	1	0	0	0	4	3.88
7.	Curiosity.	1	0	0	1	0	1	0	1	0	0	0	0	4	3.88
9.	For the money.	1	0	1	0	0	0	0	0	1	0	0	0	3	2.91
10.	Had mixed views anyway.	0	0	0	0	1	0	1	0	0	0	0	0	2	1.94
10.	Encourages stringent examination of own values.	0	0	0	0	0	1	0	0	1	0	0	0	2	1.94
10.	Necessity of often doing things you don't want to do.	0	0	0	0	0	0	0	0	0	1	0	1	2	1.94
	Miscellaneous	0	0	1	1	1	0	0	0	0	1	0	0	4	3.88
	TOTAL REASONS GIVEN													102	
	Could give no reason	0	0	0	0	0	0	0	0	1	0	0	0	1	

of total responses. Other reasons, apart from the above, suggested feelings of "pleasure" included comments that it was "interesting or enjoyable" (3.88 per cent), or aroused "curiosity" (3.88 per cent).

Many subjects complied for reasons classified as "altruistic", and these ranked fourth (equal) and totalled 10 per cent of the total reasons given. Typical of such a response was the following which is part of a transcript from a Phase III interview:

"Just to help you with your research". (S13, from group C).

The most idiosyncratic are included in the Miscellaneous category. One subject commented:

"I guess in a way I didn't believe these (headings), but I didn't admit them to myself". (S29, from group E).

There were two types of reasons offered by trainee nurses who refused the task, at the start of Phase II; they either felt it was too much effort, or unethical.

Discussion

The main significance here is the low ranking of financial incentive, as a reason for compliance.

Yet, the inverse relation of attitude change, to amount of incentive, is a keynote of both Dissonance and Incentive theories.

Many studies assume that the reason for compliance is financial, without actually supporting such an assumption by the use of an appropriate experimental check. The role of financial incentive is discussed thoroughly in the major Discussion section, as the implications of the above-mentioned result are of some importance to the field.

Many subjects already felt committed to carrying out whatever experimental task E presented, unless it was too demanding. They had already made their decision to comply before they entered the experimental setting for Phase II of the study ("Part of an experiment they had volunteered for").

This would tend to support Nuttin (1975), who suggested in his experimental findings, that the amount of incentive is purely incidental. Dissonance is aroused by other factors, other than some of the traditional ones Dissonance theorists claim (Nuttin, 1975, p. 92).

Many of the other reasons offered appear preclusive of the financial one predicted by Dissonance theorists. "Altruistic reasons" is one such reason.

Even if the non-financial reasons were merely additional, and not preclusive, logically it would appear that these would also provide at least equal impact on the inducement process. Experimental support of this assertion is presented in the Discussion section.

TABLE 14

Decision Time in Seconds for each Subject to Decide to Perform the Discrepant Task of Writing Counterattitudinal Assignments

				Subjects						Group Means	Overall Means
CHOICE	PUBLIC	$5	A	2.0	14.2	1.0	0.8	1.0	2.6	3.6	
		$3	B	3.0	2.0	1.0	0.8	2.0	65.0	12.3	
		$1	C	15.0	1.6	30.6	5.2	0.8	29.8	13.8	
	ANON	$5	D	24.4	85.0	1.0	1.2	3.2	1.2	19.3	12.6
		$3	E	1.6	79.0	1.0	0	1.0	0.8	13.9	
		$1	F	2.0	4.0	0	5.2	65.0	0.8	12.8	
NO CHOICE	PUBLIC	$5	G	2.0	0	0	1.4	1.0	0	0.7	
		$3	H	3.0	0.2	0.6	0	0	0	0.6	
		$1	I	0	2.0	0	0	0	0	0.3	
	ANON	$5	J	2.0	14.0	0	0	0	0	2.7	0.8
		$3	K	1.0	0	0	0	0.6	0.6	0.4	
		$1	L	0	0	0.5	0	0	1	0.3	
CONTROL			M	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-	

Decision time with respect to Compliance or Refusal

The difference between the Overall Choice mean (12.6 seconds) and the Overall No choice mean (0.8 seconds) is 11.8. This difference is statistically significant, using a t test (Unrelated measures)($t_{10} = 4.28$, $p < 0.005$). This difference is reflected in the magnitudes of the group means, where all six Choice groups are greater than the No choice groups. The least clearly differentiated were the mean differences between group A (3.6 seconds) and group J (2.7 seconds). It is worth noting, that the group J mean is elevated by the atypically high value of one member subject.

Discussion

Decision time was difficult to measure. It was difficult to ascertain at precisely what point a subject had reached a decision to comply. Responses tended not to be definitive. Often subjects would not verbally communicate their answer before asking additional questions about the task. It was sometimes difficult to determine whether this was pre-decisional or post-decisional clarification. Measurement was probably, therefore, cruder than the figures suggest, corrected to one decimal place.

For this reason no further tests of significance have been attempted although inspection would suggest that most group mean differences are of sufficient magnitude to attain statistical significance.

A more serious difficulty was raised by the qualitative responses of subjects (see p.132). A number of subjects revealed that their decision had been made before they arrived for the decisional phase (Phase II).

However, taking such reservations into account, timing the decision did provide an appropriate experimental check of perceived choice. It would appear that the manipulation of choice was reflected. to some extent, in the subject's latency in reaching a decision to comply.

Persuasiveness of the Assignments

To recapitulate, in experimental Phase III, each experimental subject rated each of her three counter-attitudinal assignments on a thirteen point scale, as to how persuasive she felt they were (see p. 78).

After the names of the signed assignments were obliterated, the 216 assignments were completely randomised and independently presented to two associates of the writer. These people, Judge A and Judge B, used the same scale as did the subjects, to rate the persuasiveness of each assignment.

For the purpose of assessing interjudge reliability, the original thirteen point scale was collapsed to a five point scale, which used the same labels. This action allowed comparison with Rosenberg's study (1965), as he used a five point scale. On page 78, the original scale is depicted, and it can be seen that the new scale, ranging from 1 (Not persuasive at all) to 5 (Completely or nearly completely persuasive), was readily derived. For each assignment the subjective rating was compared with the mean of Judge A and Judge B's independent rating.

The comparisons showed that 88.89 per cent of the low involvement assignment differential ratings were either identical or within one point of each other. For the medium and high involvement assignments, the corresponding reliability figures were 84.72 per cent and 86.11 per cent respectively. The overall mean of these three interjudge reliability figures is 86.57 per cent.

TABLE 15

Experimental group means of each subject's ratings (SR) of Persuasiveness Combined Judge ratings (JAB) and the Resultant Mean for Assignments of Low, Medium and High Involvement Respectively

L Group	LOW SR	LOW JAB	LOW Inv. Mean	MEDIUM SR	MEDIUM JAB	MEDIUM Inv. Mean	HIGH SR	HIGH JAB	HIGH Inv. Mean
A	2.167	2.167	2.167	2.333	2.500	2.417	2.833	2.667	2.750
B	2.333	2.667	2.500	2.333	3.167	2.750	2.167	2.500	2.334
C	2.167	3.000	2.584	2.000	2.667	2.334	2.333	3.000	2.667
D	2.667	3.167	2.917	2.500	3.167	2.834	2.167	2.500	2.334
E	2.000	2.833	2.417	2.667	3.167	2.917	2.500	2.667	2.584
F	3.000	3.500	3.250	2.000	3.167	2.584	2.500	3.000	2.750
G	2.667	2.500	2.584	2.333	3.000	2.667	2.500	3.167	2.834
H	2.667	2.667	2.667	2.333	2.667	2.500	2.500	2.833	2.667
I	2.333	2.167	2.250	3.000	2.833	2.917	3.000	3.167	3.084
J	2.000	2.500	2.250	2.333	3.000	2.667	2.667	2.833	2.750
K	2.667	3.000	2.834	2.667	2.833	2.750	2.500	3.500	3.000
L	2.667	2.667	2.667	2.167	2.667	2.417	2.000	3.167	2.584
	2.445	2,736	2.591	2.389	2.903	2.646	2.472	2.917	2.695

Table 15 used the modified figures, which resulted from the collapsing of the original 13 point scale to a five point one, as described in the previous paragraph.

The two judges tended to rate the assignments at all three levels of Involvement, as more persuasive than did the subjects. Also if the levels of Involvement were disregarded, the overall subjective mean was 2.435, while the overall judge mean was 2.852. However, none of these mean differences were of sufficient magnitude to attain statistical significance using a t-test (Related measures)($p > 0.05$).

With reference to the table, it is apparent that a direct relationship between increasing levels of Involvement, and Persuasiveness exist. Again, however, none of the differences are significant ($p > 0.05$, Related measures t-test).

Examination of the within subject factors revealed no differential effects of note. The means for the Low ($1.00), Medium ($3.00) and High ($5.00) Incentive subjects were similar, the values being 2.674, 2.660 and 2.598 respectively. The differences were not statistically significant ($p > 0.05$, Related measures t-test).

The choice and no choice means were very similar, being 2.616 and 2.672 respectively. The

difference between means was not statistically significant ($p > 0.05$, related measures t-test).

The relative publicity and anonymous subject means were 2.593 and 2.695 respectively, and the difference was not statistically significant ($p \geq 0.05$, related measures t-test).

Discussion

The collapsing of the original thirteen point scale of persuasiveness, to a five point one, allowed a comparison of this study's interjudge reliability figure with that of Rosenberg (1965). The latter study found that 80 per cent of two judge's ratings of persuasiveness were either identical or within one point of a five point scale.

Therefore, in terms of interjudge reliability, the present study compared very favourably with that of Rosenberg (1965). The present study was more comprehensive, in that the individual subject's ratings of their own assignments was taken into account.

With regard to the persuasive data per se, little can be said of an interpretative nature, without caution, as differences did not attain statistical significance, and the following comments are made with this major reservation in mind.

The subjects consistent tendency to rate their assignments as less persuasive than did the two judges, may represent a self-effacement effect. It is noted that the subjective ratings are consistently closest to 2 ("slightly persuasive") while the two judges consistently rate the same assignments closest to the integer 3 ("moderately persuasive").

The direct relationship between Involvement and Persuasiveness, possibly results from a greater facility to remember oppositional ideas of issues that are more important to the subject.

The means of the between subjects are almost remarkable by their being virtually identical and no further interpretative comment will be offered.

Qualitative data

This section refers to the verbal responses of subjects to questions posed during the tape-recorded interview of experimental Phase III.

The questions relating to experimental checks are dealt with, not here, but in the final part of the Results (see p.140).

The answers to questions and other general comments were not intended for numerical analysis, but merely to provide some idea of the subjects' reactions to the study. However, for economy of presentation, some numerical treatment is inescapable.

The questions asked are reproduced here, verbatim, prior to presentation of the responses.

Q3 "How would you feel towards doing another experiment like this one, if ever you were asked?"

The overwhelming reaction to this question was a willingness to participate in a study of a similar type (92.11 per cent). The figure was slightly higher for the experimental (92.85 per cent) than the control subjects (83.33 per cent).

No clear trends emerged, if the between subject factors were examined. Slightly more of the choice (94.28 per cent) than the no choice (91.43 per cent) subjects would again participate. Less of the high ($5.00) incentive subjects would again participate (86.36 per cent) than those of the two lower levels (95.83 per cent).

There was virtually no difference between the public (94.60 per cent) and the anonymous (91.43 per cent) subjects.

Of the subjects who felt they would be unwilling to do a similar experiment, all except one, cited the reason of time loss. They felt that the study had consumed too much of their time. The exceptional subject claimed the counterattitudinal nature of the experimental task, as her reason.

Some of the subjects who would again participate, qualified their response. The most frequent comment here was that they would like to know more about the nature of the experiment beforehand. One subject volunteered that the class had "gone to the extremes of confidentiality".

Q9 "If your best friend knew you had written assignments opposite to your own views, what would she think of you?"

To this question, some subjects gave more than one reply, the additional ones after reflection, and all were noted. There were 73 responses in total.

The majority considered that there would be "no change" in their friends attitude towards them (63.01 per cent), although 19.18 per cent of these added the qualifying comment "if they knew it was for an experiment"and the like.

Some subjects (17.81 per cent) simply had no idea, as to their friends reactions.

Some subjects (9.59 per cent) said their friends would "wonder why" they had complied.

A minority said that their friends would react in a negative way (8.22 per cent). They would be considered unethical or 'stupid'.

Finally, one respondent (1.37 per cent) commented that her friend would consider she had changed her views.

Q11 "How pleasant did you find the writing of the assignments?"

The majority of responses could be included under the heading Unpleasant (42.86 per cent). The next category included responses that indicated that the task was considered neutral (30.00 per cent), neither pleasant or unpleasant. Only a minority of subjects considered the task to be relatively pleasant (27.14 per cent).

Of the subjects who found the task unpleasant, most could specify what it was that caused their negative feelings. Most frequent additional comment here related to the counterattitudinal nature of the task (43.33 per cent). Other responses suggested it was the writing per se, that was unpleasant (16.67 per cent). Some found the task boring (10 per cent), frustrating (6.66 per cent) or embarrassing (3.33 per cent). Some subjects found the sheer effort of thinking up the arguments unpleasant (23.33 per cent).

Q12 "How much did you hesitate before agreeing to write the assignments?"

There was a reasonably high degree of awareness among the experimental subjects, as to how long they had

hesitated before deciding to comply. The responses could be divided into those who claimed they paused for a short time (0 — 10 seconds), and those who paused for a long time (10.2 seconds or longer). To ensure that E's and each subjects concept of both terms was similar, the latter were invited to numerically describe their pause. It was found that 85.50 per cent of the subjects responses were in accordance with the limits defined by the two terms.

Although not incorporated into Q12, some of the subjects (n=6) volunteered that they had already made their decision to comply, prior to entering experimental room 1, for Phase II.

The handful of subjects who accurately indicated their perceived pause duration, were not distributed in any pattern such as would permit comment in terms of the between subject factors.

Q13 "If you were asked to defend what you have written in the assignments to some nurses in a couple of months time, how would you feel about that?" If necessary E posed the additional question:

"Do you think you would be willing to do that?"

Slightly more subjects indicated they would accede to such a request (53.62 per cent) than refuse (46.38 per cent).

The subjects who indicated that they would decline such a request, gave a diversity of reasons. Most claimed the task would be quite unpleasant (11.59 per cent). Others said the counterattitudinal nature of the hypothetical request would be the reason (5.79 per cent). Other reasons included ethics (5.79 per cent), fear of public speaking (4.35 per cent), weakness of their assignment points (4.35 per cent), fear (2.90 per cent), and the pointless nature of such an exercise (1.45 per cent).

Q14 "Is there anything else you would particularly like to say about this study?"

Of subjects who did comment affirmatively, the overwhelmingly dominant response indicated curiosity as to the exact purpose and nature of the study (47.83 per cent). Many simply replied negatively in response to the question (27.54 per cent).

All other responses accounted for minute proportions of total responses. Some subjects found some of the questionnaire items "irrelevant" (4.35 per cent). Some subjects indicated that the experiment had been a worthwhile experience for them personally (8.70 per cent). There were various other responses, each accounting for only one subject.

Discussion

This part of the procedure was worthwhile in allowing subjects to express their reactions to the study. However, the responses should be considered generally - and not too specifically. It would be noted that a couple of subjects difference could somewhat artifically represent a large-appearing percentage difference.

It is of interest, that despite the general reaction that the task was unpleasant, most of the subjects would participate in a similar study, if asked.

Subjects appeared to treat the study seriously, rather than casually. This was partly reflected in their accurate judgement of how long they hesitated prior to complying as well as their keenness to know what the study was all about.

The question concerning their best friends reaction, could have been phrased better, as most responses were in need of qualification. Obviously, the fact that an experiment was the cause of their action, was crucial. Despite this, most anticipated no change in their friends prior attitude towards them.

The fact that the majority would not be prepared to defend their assignments to their peers, does underline the difference between relative publicness and anonymity. It also highlights the relative nature of these terms. Presumably, the willingness to defend the assignments to "an assistant of mine" (public condition) is viewed as more anonymous than the act of exposing themselves to their peers.

THE EXPERIMENTAL CHECKS

The success of the manipulation of choice

Table 16 is based purely on subject ratings, on a thirteen point scale of how much choice they felt they were given as to whether or not they complied (see p. 77 for a diagram of the scale). The highest ratings represented the highest perceived subjective choice.

The difference between the overall mean for all choice groups (9.306) and that for all no choice groups (4.667) was statistically significant ($t_{10} = 5.047$, $p < 0.005$). This difference is even greater if the most atypical result of each group is partialled out. (The means are then, respectively, 10.400 and 3.833).

Examination of the individual group means demonstrates that all six choice values are of greater magnitude than those of the no choice groups, which is satisfactory. The poorest results are the means from group D and group K, because they differentiate least clearly on the choice-no choice continuum.

Although all group means were correctly ordered, not all differences attained statistical significance. In fact, if the means are ordered from highest to lowest, only the highest and lowest values are sufficiently different from each other to reach statistical significance.

TABLE 16

The success of the choice manipulation as reflected by Group and Overall mean subjects ratings

											Overall Means
CHOICE	PUBLIC	$5	A	12	7	13	13	13	13	11.833	
		$3	B	10	1	10	6	10	12	8.167	
		$1	C	10	13	12	11	5	7	9.667	9.306
	ANON	$5	D	6	13	6	13	5	1	7.333	
		$3	E	8	7	13	13	7	13	10.167	
		$1	F	10	13	13	7	7	2	8.667	
NO CHOICE	PUBLIC	$5		5	1	6	4	1	5	3.667	
		$3	H	1	1	13	7	9	3	5.667	
		$1	I	11	6	8	2	1	8	6.000	4.667
	ANON	$5	J	7	1	6	3	5	3	4.167	
		$3	K	6	1	13	10	5	2	6.167	
		$1	L	2	1	3	3	3	2	2.333	
	CONTROL	$1	M	-	-	-	-	-	-	-	

TABLE 17

Significance table of m differences between group means of choice ratings

Group	Mean	
A	11.833	
E	10.167	S****
C	9.667	S****
F	8.667	S****
B	8.167	ns
D	7.333	ns
K	6.167	ns
I	6.000	
H	5.667	
J	4.167	
G	3.667	
L	2.333	

Key: S**** = Significant at .005 level of confidence
ns = not significant (.05 level)

If, however, the most atypical result is removed from each group, all mean differences of the above pairings attain statistical significance at the 0.05 level of confidence, with the exception of the first. With this modification, the groups are ordered as follows:

TABLE 18

Significance table for differences between group means for choice ratings with most atypical results deleted

Group	Mean (modified)
A	12.800
E	10.800
C	10.600
F	10.000
B	9.600
D	8.600
I	5.000
K	4.800
H	4.200
J	3.600
G	3.200
L	2.200

ns
S****
S****
S****
S****
S****

Key: S**** = Significant at .005 level of confidence
ns = Not significant (.05 level)

Note that with this modification, groups I and K assume each others former position.

Responses could be viewed in terms of typical, atypical and marginal responses. Typical choice results were within 8-13 limits, typical no choice responses within 1-6. The intermediary value (7) defined marginal responses. Viewed in this manner, the following table can be constructed:

TABLE 19

Typical, Marginal and Atypical Choice Ratings

	Typical	Marginal	Atypical
Choice	22	6	8
No choice	27	2	7
Overall	49	8	15
Overal (%)	66.667	11.111	20.833

The majority of responses were therefore in the typical range, although a sizeable minority were atypical.

Discussion

The results show a reasonably successful manipulation of choice, as reflectedby the subjects rating of this variable. The overall mean difference clearly illustrates this.

The main significance of the group means is in the fact they are correctly ordered. Some of the mean differences between the choice groups and the no choice groups did not attain statistical significance, but two explanations could account for this.

Firstly, the scale was a fairly narrow one, with only thirteen possible response options. This means that even clearly psychologically differentiated

responses may not necessarily be of sufficient numerical difference to attain statistical significance. For example, the difference between a response of 8 (clearly a choice rating) and one of 6 (clearly a no choice rating) may still not be statistically significant.

The solution to this difficulty probably involves incorporating a larger number of choices between the extremes on the choice-no choice continuum.

Secondly, atypical choice ratings adversely influenced the typical ratings (which accounted for most responses). Even given the narrowness of the scale modification of the group means to exclude the most atypical results, markedly improved the differentiation between choice and no choice.

The remaining experimental checks caused a number of unsatisfactory results to come to light. Such subjects' results were eliminated, and are shown in Table 20, together with the reasons for this action.

A total of fifteen results were excluded from analysis, which means that 93 subjects completed Phase II of the experiment. Therefore, 78 results were included in analysis, which represents 83.87 per cent of the total.

TABLE 20

Results that were Eliminated from analysis, including the reasons for this action

Reasons	Groups T	A	B	C	D	E	F	G	H	I	J	K	L	Control
Absenteeism	4		1										2	1
Misunderstood	4	1	1			1		1						
Misread statements	3							1				1	1	
Semantic problems	1	1												
Disbelieved public defence	1			1										
Atypical of subject criteria	1						1							
Experimenter's mistake	1													

T = Total

Some subjects did not complete the study, in that they did not return for experimental Phase III. Thus, it was not possible to analyze their (partial) results. These subjects are listed under the heading Absenteeism. The reasons included illness, departure from Christchurch and simple refusal to return.

The absentee subjects were not eliminated as a result of an experimental check, but it is convenient to discuss them in this section. The same comment can be made as regards the one result eliminated, because of the experimenter's mistake.

Because this particular subject arrived earlier than expected, she was given another's headed assignment sheets. The mistake was realised virtually immediately,

but the subject was allowed to proceed through the experiment, to avoid any dissatisfaction with a rapid ending to her participation.

One subject's results were eliminated, because she was considered atypical of her experimental peers in that she was middle-aged, i.e. outside the age range of the other subjects.

The remaining nine subject's results were eliminated as a consequence of experimental checks. Four of these subjects misunderstood the counterattitudinal nature of the task, and proceeded to write their views regardless of the headings. These subjects revealed their error in Phase III, when the appropriate question was asked in order to check that they realised the counterattitudinal nature of the task.

Three subjects misread the relevant statement in the Phase I booklet twice, both in the Involvement and the Attitude questionnaire (thus overcoming the safeguard built into the selection of the three issues of checking the Involvement response (second column) with that of the Attitude questionnaire). Effectively, on the misread item, E had inadvertently phrased the heading in such a way that it agreed with the subject's viewpoint.

The validity question posed in Phase III also unearthed another subject who was also writing an assignment consonant with her personal views (semantic problems). This particular subject was not certain of the meaning of the word "nationalization", when she first did the questionnaire booklet, during experimental Phase I. Prior to arriving for experimental Phase II, she looked up the meaning of the word, which was different from her original conception.

An excellent high level of E's credibility held, as regards whether or not subjects' believed they would either have their assignments anonymity respected or whether they would be required to publicly defend their arguments. One subject, however, did not believe she would have to give a public defence, and therefore effectively, the task was cognitively less public than for the other public subjects. She said: "No, (I didn't believe you) (Why?), I don't know, I just didn't. You said all the way through that you were doing it for yourself as a thesis, so I don't think anyone would be doing it with you".

The final two experimental checks did not yield any eliminations. With respect to the "limited period" secrecy request, there were some minor infringements, although most subjects took the request quite seriously. The aspect least strictly adhered to

was the relative amounts of money. No subject appeared to have had prior expectation concerning what was about to take place, as regards experimental Phase II or III.

Examination of the interviews of subjects who admitted speaking to other subjects, revealed no instances of deception.

Recently, since the study ended, feedback was received from a member of the technical trainee nurse class, and this indicated that the secrecy request was taken seriously.

The appropriate question asked by E, in experimental Phase III demonstrated that no one even approached successfully working out the purpose of the study.

Discussion

The number of results that had to be eliminated provides its own justification for stringent experimental checks. Earlier studies, like that of Festinger and Carlsmith (1959), did not report on the subject. Yet, it would appear unlikely that no results had to be discarded when one considers studies that do report, in detail, on this aspect. Frey and Irle (1972) for example, report in detailed form on the 12 subjects (7.60 per cent), whose results were excluded from analysis.

The current study presented eliminations in a more detailed form than most studies. The proportion (17.24 per cent) is higher than in most other studies, for example, that of Frey and Irle.

CHAPTER V

DISCUSSION

The results are not supportive of Dissonance theory, either in general form, or the differential form suggested by Frey and Irle (1972). However, the results also do not support the alternative - Incentive theory. The best that can be said, is that any theoretical explanation must take more into account than the few factors that most investigators (not just Frey and Irle) suggest as a complete explanation of attitude change behaviour.

The current study introduced just one additional factor; numerous others could have been either additional or substitutional. The variable that was chosen, degree of personal subjective Involvement, was by no means a new one. Himmelfarb and Arazi (1974), for example, incorporated this into their study, One member of the Dissonance school, namely Cohen, recognized the importance of this variable, by suggesting that higher degrees of Involvement, yielded more dissonance and consequent attitude change if subjects performed counterattitudinally. (Cohen 1959). The results of the current study did not support Cohen's predicition, but the point is that Dissonance theory does have something to say about Involvement, despite being overlooked by Frey and Irle.

Frey and Irle chose to overlook not only this variable, but the many others considered to be important by Dissonance theorists, in determining the magnitude of dissonance.

Some of these were discussed in the Introduction section, and included Effort (Arrowood and Wood, 1970), Commitment (Linder and Worchel, 1970), Source attractiveness (Zimbardo et al 1965) and so on. It is enigmatic that Frey and Irle should overlook relevant previous research to concentrate on just three (Amount of Public exposure, Choice and Incentive) thus inviting the criticism of 'simplicity'. At this point, the discussion will examine the evidence of Experimental bias as it may have relevance to Frey and Irle's finding, as well as others which are usually supportive of their investigator's experimental viewpoint.

A cynic may observe that when an investigator replicates a study, his published results always are 'supportive' of his own theory. Thus, Festinger, Brehem and Cohen et al usually obtain Inverse relationships between financial incentives and attitude change. Incentive theorists, such as Elms and Janis (1965), usually obtain the Incentive effect.

Is there any advantage in investigating attitude change, using researchers from both the Incentive and the Dissonance theoretical schools? Carlsmith, Collins and Helmreich (1966) was one such study, that did. Not surprisingly, in their study involving either face-to-face role playing or anonymous essay writing, each of a discrepant nature, their results were the same 'compromise' as those of Frey and Irle's.

It should be noted that the Experimenter in the current study, had no real preconceptions with respect to the two theories, prior to carrying out the procedure. It is true that the results confirmed the hypothesis concerning the equal importance of another variable, than those Frey and Irle considered crucial (hypothesis 1). Frey and

and Irle's distinctions were not upheld which lead to the rejection of Hypothesis 2.

When the topic of Experimental bias is raised, many investigators are reluctant to deal with it directly, in an attempt to establish how it operates. There is a tendency to be evasive, and treat it as abstract - something that cannot be 'pinned' down.

It is quite true, that comments about some aspects of this influence can only be speculative. However, this writer believes that some degree of careful speculation is better than treating the issue as mysterious and unfathomable.

However, careful examination of some published results, does reveal some degree of 'observable' Experimental bias.

The writer will address himself to both 'cautious speculation' as well as 'observable' examples of Experimental bias, in an attempt to explain why so many 'predictable' results are part of the attitude change literature.

In the current study, it can be said that the Experimenter had no reputation to uphold. He could not find himself in the dilemma of producing results, which were not consistent with those on which a reputation was based. It would appear quite possible that partisan theorists consistently publish their 'supportive' results; Results that

are not confirmative of their theories are simply not published.

Nuttin (1975) raised an even more pernicious possibility, in this context. Addressing himself critically to a study by Cohen (In Brehm and Cohen, 1962, P73 - 78), he comments:-

> "The very fact that no reasons were offerred (for the inequality of subject numbers across conditions) makes it difficult, however, to defend the author when he is accused of stopping data gathering as soon as the results confirmed the predictions"
> P. 4 Nuttin (1975)

The current study, of course, also eliminated some results from analysis. However, the reasons for such action were clearly spelled out and in line with specific experimental checks. Also, there was equality of subject numbers in each group, unlike Cohen's study.

If the above is in the realm of 'speculation', that which is actually 'observable' is somewhat disquietening.

A further example is the tendency among some investigators to draw conclusions from insufficent data in an almost desperate attempt to confirm their particular theoretical viewpoint. Elms and Janis (1965) obtained only one result (of 10) that was statistically significant. On this hardly robust foundation, they described their results as supportive of Incentive theory.

Rosenberg's (1965) study furnishes a second example of bias. Rosenberg claimed that Cohen's Inverse effect (Cohen 1962) is due purely to 'contaminants' such as the delaying of the payment of the

reward as well as a lack of 'perceptual separation' of attitude measurement and the counterattitudinal act. However, he was faced with the embarrassment of Festinger and Cohen (1959)'s results, which also obtain the same effect as Cohen, without the two 'contaminants'. Accordingly, Rosenberg claimed that Festinger and Cohen's 'perceptual separation' was insufficent, in that they did not disguise the attitude measurement and counterattitudinal phases. Specifically, Rosenberg claims that the two phases should have been held in different university departments. Yet, according to Nuttin (1975), Festinger and Cohen went to considerate lengths to successfully ensure adequate 'perceptual separation', and that separate university departments was not essential. Furthermore, the payment of the reward before the counterattitudinal role playing, involved less risk of research contaimination than Rosenberg's payment immediately after. Nuttin refers to Rosenberg's wishful interpretation of Festinger and Carlsmith's experiment mildly as 'rather subjective',which emphasizes the writer's point.

Setting aside the issue of Experimenter bias, when the quality of the past research relating to Dissonance theory is examined, some unfortunate patterns are apparent. Even a study as relatively limited in scope as the current one, highlighted some of the inadequacies of past research.

One unfortunate feature is the lack of conciseness in the usage of Dissonance theory terminology by researchers. Much of the

blame can be laid at the feet of Festinger and the Dissonance theorists ambiguous and unclear expression of concepts.

The results of the theoretical 'looseness' has been too much latitude in the exact operational meanings of Dissonance theory concepts. Zimbardo and Ebbesen (1969) for example, concur with this criticism. This 'looseness' of usage is a probable explanation for some of the contradictory interpretations of research results.

One example of this, is the interchangeable use of such words as 'reward' and financial 'Incentive'.[1] Thus, one researcher such as Rosenberg (1965) will use the former term while others, such as Cooper et al (1972) use the latter. The Concise Oxford Dictionary defines the two words as follows:-

reward "Return or recompense for service or merit, requital for good or evil"

incentive "Incitement (to action, to do, to doing), provocation, motive".

Thus, the words are only similar, and definitely not synonymous. Thus, when the Dissonance theorists, who tend to use the word 'reward', and the Incentive theorists, who tend to use 'Incentive', actually disagree, they are not strictly in agreement about the same term.

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[1] There are other terms used, synonymously, such as 'compensation' (Bem 1967) and 'inducement'.

Examination of the critical reviews of Dissonance theory, including Chapanis and Chapanis 1964, most frequently cite the imprecision of the theory. Ambiguity is another word often used (Zimbardo and Ebbesen 1969). There is no shortage of examples of what such theorists are referring to.

Frey and Irle, of course, have argued that a high degree of Choice, as well as a Public counterattitudenal task, were the finite preconditions.

Yet Festinger's original formulation predicted dissonance, and attitude change for Anonymous counterattitudenal behaviour, although admittedly less then for the Public condition. Frey and Irle predicted no effect for Anonymous conditions, whatsover.

It appears illogical that Frey and Irle present Public exposure as a Precondition, while its converse, Anonymity is a factor favouring Magnitude of dissonance.

Kumpf and Götz- Marchand (1973) argue that the original formulation of Dissonance theory did not clearly deal with Modes of dissonance reduction. From the Introduction section, it will be remembered that these included adding consonant elements, increasing cognitive overlap, selective attention and so on. However, no clear rules are laid out to demonstrate the quantitative relation of such modes to each other, or to attitude change. The type of exact relation-

ships are left purely to the intuition of the reader.

There are many other examples, which will not be gone into in the interests of brevity. The point is, that ambiguous, imprecise theoretical concepts prepare the way for too much latitude in the interpretative meaning of such concepts, or worse, in the words of Zimbardo and Ebbesen (1969), incorrect translation into specific experimental operations.

The likely corollary, as mentioned, is contradictory results often even from intended replications. For example, note Rosenberg (1965) 's replication of Cohen (1962).

Another unfortunate feature of past research in the field, is the number of assumptions made, without sufficient and adequate backing. Perhaps the most serious example of this is the assumed role of the different amounts of financial incentive. Specifically, it is assumed that the reason for subjective compliance is monetary. The current study did not make this assumption but provided an experimental check.

It is worth commenting on Festinger's original formulation of the role of money. The minimum level of remuneration was described as a "Minimal force for compliance" or just enough to elicit the overt compliance. (P. 75, Festinger, 1957).

Yet, many studies do not incorporate an appropriate experimental check, to ensure that the reason for compliance was, in fact, monetary.

One possibility, which was used in the current study, is to ask the subjects exactly why they complied. In the pooled responses to this question in this study, monetary reasons for compliance ranked a poor ninth in order of frequency.

Some investigators have provided reasons as to why they do not directly ask such questions. Rosenberg (1965) for example, felt that such a procedure may be experimental 'contaminant'. He may or may not be correct, but he does not provide an alternative 'non-contaminating' check as to the specific reasons for compliance. Dissonance theorists are equally guilty of making the same unsupported monetary assumption. Cohen (1962), is one such example.

The writer considers such an unsupported assumption unwarranted. He considers it imperative that some type of check is incorporated to provide empirical support for the monetary assumption.

Another means of assessing the role of money, which would not provide 'contamination'(Rosenberg's expression) would be to have a zero reward counterattitudinal condition. Luckily, one investigator did design such a study. Nuttin (1975, P83 - 96) included a condition where

subjects delivered a counterattitudinal plea, supposedly for a radio broadcast. Firstly, subjects complied in this condition in approximately equal numbers as for the rewarded conditions. Clearly, as none of those people complied for monetary reasons, they must have complied for other, non-monetary reasons. In addition, if a person complied without financial justification, he would experience the most dissonance and concomitant attitude change, according to Dissonance theory predictions. The results, however, did not support such a conclusion. In fact, the low reward (20BF) [2]condition yielded significantly more attitude change. The zero reward condition yielded virtually identical attitude change, as the high reward (200BF)[3] condition. Thus, on two counts, results from a zero reward condition cause difficulties for the assumption that compliance is for monetary reasons, which, at the smallest reward level is the "Minimal force for compliance".

Dissonance theory is criticised directly because it is at its most vulnerable here. However, the writer hastens to add, that any unsupported assumption, that the reason for compliance is financial, is unwarranted. By implication, some Incentive theorists are guilty of the same flaw. Janis and Gilmore (1965), for example, do not check their assumption, before arriving at a conclusion supportive of Incentive theory.

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[2]20BF or twenty Belgian Francs is the equivalent of US $0.40

[3]200BF or two hundred Belgian Fracs is the equivalent of US $4.00

Interestingly enough, apart from the infrequency of monetary gain being cited as a reason for compliance in the current study, for some subjects the money was actually a disincentive. Several subjects said they were not very keen about accepting money, although were quite willing to comply.

This raises the question of exactly why subjects did comply, assuming that the results of the current study, as well as those of Nuttin's study are valid.

The most frequently cited reason for compliance was the comment that it was simply "Part of an experiment they had volunteered for".

It seems likely that many subjects in attitude change experiments view their actions simply as being part of the research, rather than as a discrepant act per se.

However, another possible reason arises from the nature of most of the subject pools used. Specifically, as noted in the Subjects section, much of the research has used university students. Much of the dissonance research could be confounded by the possibility that the major reason for compliance is a desire to appease the lecturer, to avoid giving a negative impression, or worse still, as a partial requirement of the university course concerned.

Some studies report on procedures, which incorporate non-monetary pleas for cooperation with E. Inadvertently, the impact of the financial incentive is reduced as a consequence of E's anxiety to elicit the subject's compliance. For such studies, such conditions should more accurately be called "Financial incentive and Experimenter plea".

Even such scrupulously designed studies as Nuttin's replication of Rosenberg (1965), introduce this extraneous variable. (1975 P23-37). As part of the 'perceptual separation', the seond Experimenter says:-

> "I myself am lucky when I find two or three volunteers a day. And that's how I have to prepare my PhD thesis".

And he continues:-

> "Of course, I do not want to force you to write the essay, but you certainly would do me a favour".

Intuitively, it seems unlikely that the trivial reward which is as little as 5 BF ($US0.10) is the real reason for compliance. The reason could possibly be, a feeling of sympathy for E2, who is unable to obtain many subjects.

The current study was unlikely to be confounded by the need for subjects to appease E, as he was in no way associated with either nursing practical or theoretical training. In addition, the standard-

ized procedural instructions for Phase II, did not include any such extraneous extra-monetary plea.

Another unsupported assumption relates to the real value of the money offered as a financial incentive. Too little attention is paid as to whether or not the amounts offered have very much personal value for the subjects concerned. Often the amounts are very small - as little as $0.05 and $0.50 (Lependorf 1964) - without any experimental check as to whether the subjects consider these to be of significant value to them. The research often refers to High and Low amounts of Incentive and supposedly differential results, overlooking the fact that one studies High, is less than another's Low. The current study's Low incentive value for instance, was higher than Lependorf's High value ($0.50). This is important, when it is remembered that most studies do not provide for any relative awareness of other subjects' incentives.

Seemingly overlooked, is the fact that the financial status of subjects may affect the personal real value of the incentive. Obviously, a $5.00 incentive's real value will be greater for a poor person than for someone who is relatively wealthy.

In the selection of subjects, for the current study, some effort was made to select subjects of a reasonable degree of homogeneous financial status. However, there is probably room for even more stringency. Possibly, a post-experimental check could ensure that no subject is markedly different from the rest, as regards financial status.

The current study highlighted the inadequacy of providing only two levels of financial incentive. The results, in many instances, revealed a markedly different pattern if all three levels were considered, (rather than just two). The implications for much of the research are serious, as most studies provide only two levels of incentive (Brehm and Cohen 1962) were a welcome exception, with their use of four levels of incentive; (0.50, $1.00, $5.00 and $10.00)

However, even the use of three levels is a bare minimum, and probably more are required before researchers can profound theories involving linear or possibly curvilinear relationships. Yet, both the Dissonance and the Incentive schools have used research often with only two levels of incentive, to make their respective linear predictions.

Another example of unsubstantiated assumptions, is the chain of causal elements proposed by Dissonance theory. This chain can be summarized as follows:-

Counterattitudinal behaviour → Cognitive dissonance → Attitude change

Neither the links, nor the elements, have been stringently tested. Dissonance theorists make the mistake of assuming that obtaining the predicted inverse relationship between amount of financial incentive and attitude change, provides proof of the entire theory.

One component of the chain, specifically the role of the converse of Counterattitudinal behaviour, i.e. Pro-attitudinal behaviour,

has been largely ignored by the Dissonance theorists.

Yet the research that has provided for the examination of Pro-attitudinal behaviour, has cast considerable doubt on the first component of the theoretical chain. Nuttin (1975, P83-96), found that there was little difference in attitude change, whether advocacy was of a Pro-attitudinal or a Counterattitudinal nature. In another experiment, there was slightly more attitude change for Pro-attitudinal advocacy then its converse; this was for the high incentive level (500BF) (Nuttin 1975, P43-49),

This brings the discussion to the related topic of the inadequacy of Controls of much research. Often these pseudo-controls are experimental Controls in name only. Frey and Irle (1972) for example, make the lame comment that the:

> "Control condition is presented only as an estimate of student opinion on the issue" (Frey and Irle 1975, P49)

This comment was included only as a footnote, and as no mention of Controls was made in their Procedure section, it would seem that it was purely an afterthought. An adequate Control should include such aspects as a Zero incentive level for Counterattitudinal behaviours, and, Pro-attitudinal behaviour at different levels of incentive.

In support of these above comments, are Nuttin's remarks:-

"...., we have always regretted the absence of a pro-attitudinal advocacy control condition in the relevant literature"

(Nuttin 1972 P85)

The current study did provide a Control group, which was a greater adequacy than those described in much of the earlier research on which so much stress has been placed. However, even this could have been considerably improved to include several levels of incentive, including zero, and a Pro-attitudinal task. There was, however, some constriction by the many combinations of variables, which necessitated 13 groups.

In the Introduction section, two general types of criticism were noted. Firstly, the same result as that predicted by the Dissonance school occured, but an alternative theoretical explanation was offered. Secondly, both a different result occurred and a alternate theoretical explanation was offered. The correct prediction of a result, as noted (i.e. Either Incentive effect or Dissonance effect) does not mean the confirmation of the theory. Here, both Dissonance and Incentive theorists are at fault. Neither does valid criticism of one theory, together with presentation of an alternative theory, provide confirmation of the latter; Rosenberg's theory of Evaluation Apprehension provides an example of misconception. Dissonance theory has been found wanting, but none of the oppositional theories have provided an comprehensively detailed alternative, which successfully accounts for both predicted results and theoretical explanation of same.

CHAPTER VI

SUMMARY AND CONCLUSION

The study examined the propositions of Frey and Irle (1972) who suggested a compromise to the contrasting results predicted by the Dissonance and Incentive theorists.

Specifically, under Choice/Public conditions, Frey and Irle predicted an Inverse relationship between amount of financial incentive and attitude change. Alternatively, under No choice/Anonymous conditions, they predicted a Direct relationship. The Inverse relationship was consistent with Dissonance theory predictions, while the Direct relationship was consistent with Incentive theory predictions. Thus, both theoretical explanations were accommodated, under the specific conducive to each one.

Dissonance theory itself included more than the three variables (Choice, Relative Publicity and Incentive) in its explanation of attitude change. The writer felt that Frey and Irle were being overly simplistic in considering only these factors as definitive, in their explanation of the complex human behvaiour involved in attitude formation or change.

Therefore, an additional factor, personal Involvement in the task, was added to these other three, to form the basis of the study.

It was hypothesized that the effect of Involvement would be at least equal, to the other three Frey and Irle considered crucial. Additionally, it was hypothesized that the compromise predictions of these investigators, would not be confirmed when the additional factor was considered.

There were three experimental phases, which involved over 78 trainee nurses who served as subjects.

During experimental Phase I, a group of subjects completed a booklet, including an Involvement and an Attitude questionnaire. From this, an issue of High, Low and Medium Involvement was chosen for each subject.

Subjects were randomly assigned to either one of the 12 Experimental, or the one Control group. Sufficient candidates were used to ensure 6 subjects per group, after the elimination of unsatisfactory results.

The groups were dictated by all combinations of the three Between group factors, namely Choice, Relative publicity and Incentive assignment.

During Phase II, each Experimental subject was requested to undertake the same task, namely writing an counterattitudinal assignment on each of the issues of High, Medium and Low Involvement. The Control subjects merely filled in the same questionnaire booklet. In accordance

with the particular Experimental group, Choice was either emphasized or minimized, the Relative Publicity of their task was either emphasized or minimized, and there were three levels of financial Incentive offered ($1.00, $3.00 or $5.00). After the writing task, each Experimental subject completed the same questionnaire booklet, to gauge any immediate attitude change.

Phase III followed Phase II, after an average of five days lapse. All subjects completed the booklet for a third time to allow examination of the temporal stability of attitude change. A tape recorded interview followed which included various experimental checks, as well as subject assessment of their assignments and the study.

Responses to the experimental checks suggested successful manipulation of the four factors. In addition, these revealed a minority of results which had to be excluded.

The Primary results, or those relating to the dependent variable and experimental Hypotheses, demonstrated confirmation of one but not the other. Frey and Irle's differential predictions were not upheld, regardless of whether or not Involvement was considered.

The Secondary results, or those not directly relating to the dependent variable and Hypotheses, notably demonstrated that the reasons

for subjects' compliance were non-financial, which does not support either Frey or Irle's differential predictions, or either Dissonance or Incentive theories in general.

Dissonance theory was originally built on a shaky foundation of vaguely defined concepts, unclear information about the interplay between concepts, and poorly backed assumptions presented as facts.

Such a theory then proved very difficult either to confirm or disprove. This partly explains the enigma of research results that are diametrically opposed. In addition, the lack of theoretical conciseness has allowed Experimental bias to play a role in the definitions and boundaries of concepts, and their operations more stingent.

Definitions of terms and operations, would have reduced these 'intuitional' applications to research.

However, even a non-partisan theorist would have difficulty testing Dissonance theory, because of its vagueness. Soon after its introduction, there was a tendency for polarisation of research. The reputations of many researchers were bound up with predictions that their theories demanded. This partisan attitude did not help the attitude change field and this is unfortunate.

As a result of the readiness to propose alternatives, there are alternate theories which are as loosely formulated as Dissonance theory. Incentive theory falls into this category.

In addition, more critical evaluation of the literature would have revealed the often blatant flaws of past research, for example the studies which have provided no adequate Control groups.

In the case of Dissonance theory, certain aspects have been thrashed to the exclusion of others. For example, the effects of different amounts of financial Incentive, has received considerable research attention (despite the fact that a Zero incentive Control has been largely overlooked). In contrast, individual differences of the effects of personality variables has received less attention. It is possible that different mechanisms, relating to attitudes change, operate in different personality types.

Other questions which could be fruitfully examined include the relativity between such terms as Public and Anonymous. These are treated by such researchers as Frey and Irle, as absolute. Yet the "Public" of some researchers, is akin to the "Anonymous" of others. Nuttin's Public condition was a supposed nationwide T.V. telecast. (Nuttin 1975 P66). Yet, other researchers will use the same term to describe conditions of a much less public nature.

There are additional ways to improve the quality of research in this area, apart from the imperative of adequate Control groups. There needs to be more stringency in the selection of subjects, especially in regard to equality of financial status. It is important to weaken the student evaluative expectation. Subjects are likely to comply, because they fear the consequences of not going along with their lecturer's request. It would be preferable to use people not included in evaluation of the subject, in the role of Experimenter. Thus different levels of financial Incentive would be more clearly differentiated, if experimenters

avoided the attenuation caused by recruitment payments. The American experimental credit points system, could also have a confounding effect on this variable.

Certainly more is needed in the way of Experimental checks. For example, the Secrecy requirement requires a better means of verification, than that used by many studies. If the request is for a 'limited period' this is more realistic and more likely to be fulfilled, than attempts to swear someone to complete secrecy, especially when there is no means of monitoring the latter.

However, perhaps one of the main dangers for the field, are any attempts to explain complex behaviour, by utilising a simplistically small number of variables.

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ADDENDUM

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APPENDIX A

PERSONAL IMPORTANCE QUESTIONNAIRE

This questionnaire consists of 30 statements concerning different issues. Some of the statements are in favour of a particular issue, while others are against a particular issue. You must read each issue statement very carefully to be sure that you understand it.

You are required to do two things.

Firstly, you must decide how important each particular issue is to you, regardless of whether you agree or disagree with the statement. To do this, you must look at the scale, and carefully choose one of the 13 numbers that best describes the degree of importance the particular issue holds for you personally. Write the number that you have chosen in the first column to the right of the statement which is labelled "degree of importance to me". We stress that we are only interested in how important each issue is to <u>you</u> personally, not to anyone else.

Secondly, you must decide whether you are for or against the issue statement. If you are in favour of a particular issue statement, place a tick (✓) in the second column to the right of the statements, which is labelled "Agree of Disagree". If you are opposed to a

particular statement, you must place a cross (x) in the same column. For each statement you must place either a tick (✓) or a cross (x).

Remember to read each issue statement very carefully and take your time in deciding. Do not hesitate to ask the meaning of an issue statement that is not clear to you. There is no time limit.

EXTREMELY IMPORTANT TO ME			VERY IMPORTANT TO ME			IMPORTANT TO ME			SLIGHTLY IMPORTANT TO ME			NOT IMPORTANT TO ME AT ALL
13	12	11	10	9	8	7	6	5	4	3	2	1

Degree of Importance to me	Agree(✓) or Disagree(x)

EXTREMELY IMPORTANT TO ME			VERY IMPORTANT TO ME			IMPORTANT TO ME			SLIGHTLY IMPORTANT TO ME			NOT IMPORTANT TO ME AT ALL
13	12	11	10	9	8	7	6	5	4	3	2	1

	Degree of importance to me	Agree(✓) or Disagree(x)
1. Fines for speeding should be raised		
2. More cat owners should prepare their cats for shows		
3. People should grow their own vegetables		
4. It is not cruel to keep budgies in bird-cages.		
5. Dogs should not be allowed in the house		
6. The Government should spend more money on defence		
7. To decrease pollution of the air, open fires should be banned in Christchurch		
8. Vandals should repay Society by working to repaid the damage they have caused		
9. More litter control officers should be employed in Christchurch to deal with the litter problem		
10. No dogs should be allowed in Christchurch		
11. The Communist Party should not be allowed to participate in New Zealand general elections		
12. More Pacific Islanders should be allowed to emigrate to New Zealand		
13. The baking of Sunday bread should be prohibited.		

EXTREMELY IMPORTANT TO ME			VERY IMPORTANT TO ME			IMPORTANT TO ME			SLIGHTLY IMPORTANT TO ME			NOT IMPORTANT TO ME AT ALL
13	12	11	10	9	8	7	6	5	4	3	2	1

	Degree of importance to me	Agree(√) or Disagree(x)
14. It should not be compulsory to join a trade union		
15. Less coffee should be drunk because it keeps you awake at night		
16. More overseas doctors should be encouraged to come to New Zealand		
17. Children under the age of 10 should not be allowed to watch television programmes showing violence		
18. The Government in New Zealand should nationalize more factories		
19. The voting age in General Elections should be further lowered to the age of 16		
20. The French food frogs legs should be introduced into New Zealand's diet.		
21. Convicted drunken drivers should not be allowed to drive again		
22. Euthanasia should not be allowed under any circumstances		
23. It is a good idea to eat fish on Friday		
24. The law should not be changed to allow abortion to be more freely available		
25. Marijuana smoking should be legalised in New Zealand		
26. Capital punishment should not be reintroduced into New Zealand		
27. The water level of Lake Manapouri should be raised to provide more hydroelectricity		
28. Police in New Zealand should not be armed with guns		
29. New Zealand should continue to send sports teams to South Africa		
30. All packets of cigarettes should carry a warning that smoking can be a health risk.		

APPENDIX B

ATTITUDE QUESTIONNAIRE

This questionnaire allows you to show just how strongly you agree or disagree with the following statements. Directly under these instructions is a set of seven numbers which correspond to how strongly you may agree or disagree with each statement. Read each statement very carefully and indicate the extent of your agreement or disagreement by writing one of these numbers in the column that is to the immediate right of each statement.

STRONGLY AGREE	MODERATELY AGREE	SLIGHTLY AGREE	UNDECIDED
7	6	5	4

SLIGHTLY DISAGREE	MODERATELY DISAGREE	STRONGLY DISAGREE
3	2	1

1.	Dogs should not be allowed in the house	
2.	Fines for speeding should not be raised	
3.	The law should not be changed to allow abortion to be more freely available	
4.	The water level of Lake Manapouri should be raised to provide more hydroelectricity	
5.	More litter control officers should be employed in Christchurch to deal with the litter problem	
6.	Children under the age of 10 should not be allowed to watch television programmes showing violence.	
7.	New Zealand should continue to send sports teams to South Africa	
8.	It is not cruel to keep budgies in bird-cages	

STRONGLY AGREE	MODERATELY AGREE	SLIGHTLY AGREE	UNDECIDED
7	6	5	4

SLIGHTLY DISAGREE	MODERATELY DISAGREE	STRONGLY DISAGREE
3	2	1

9. Police in New Zealand should not be armed with guns
10. Less coffee should be drunk because it keeps you awake at night
11. It is a good idea to eat fish on Friday
12. The French food frogs' legs should be introduced into New Zealand's diet
13. People should grow their own vegetables
14. The Government should spend more money on defence
15. Euthanasia should not be allowed under any circumstances
16. The Communist Party should not be allowed to participate in New Zealand General Elections
17. To decrease pollution of the air, open fires should be banned in Christchurch
18. The baking of Sunday bread should be prohibited
19. More Pacific Islanders should be allowed to emigrate to New Zealand
20. Convicted drunken drivers should not be allowed to drive again
21. Vandals should repay Society by working to repay the damage they have caused
22. It should not be compulsory to join a trade union
23. All packets of cigarettes should carry a warning that smoking can be a health risk
24. The Government in New Zealand should nationalize more factories
25. The voting age in General Elections should be further lowered to the age of 16
26. Capital punishment should not be reintroduced into New Zealand
27. More overseas doctors should be encouraged to come to New Zealand
28. More cat owners should prepare their cats for shows
29. Marijuana smoking should be legalised in New Zealand
30. No dogs should be allowed in Christchurch